What is the impact of bilingual communication to mobilize Latinos? Exploratory evidence from experiments in New Jersey, North Carolina, and Virginia

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ABSTRACT (148 words)

Should materials aimed at increasing Latino voter turnout be in English or bilingual? Credible, theoretical arguments can be made both ways: bilingual materials may be more effective if signaling cultural awareness or less effective if seen as pandering. We tested these competing hypotheses with two rounds of randomized field experiments in New Jersey and Virginia in 2015, and North Carolina in 2016. While some GOTV experiments have used bilingual mailers, previous scholarship has not tested whether bilingual mailers are more effective than English-language materials. In the 2015 elections, both treatments increased turnout, and the monolingual English version was more effective at increasing turnout than the bilingual version. These results are replicated in the high salience 2016 election in North Carolina. These results indicate that further research is needed about bilingual communication across political and demographic contexts and about how household composition may condition the effects of bilingual communication.

KEYWORDS: voter turnout; Latino politics; bilingual communication; field experiment; getout-the-vote

Word Count: 8,457

The potential power of the Latino vote is increasing rapidly: between 2000 and 2016, the eligible Latino electorate doubled from 13.2 million to 26.6 million; by 2020, an additional 7.7 million Latinos will become eligible to vote (Bergad 2017). The demographic shift has been accompanied by increased outreach to Latino voters by parties and candidates (Barreto and Segura 2014). This outreach includes voter mobilization efforts because Latinos continue to turn out at lower rates than other demographic groups (McDonald 2017). The importance of Latino turnout in future elections is clear: more than ever, and with increasing importance in years to come, candidates and campaigns will benefit from effective mobilization of the Latino vote, particularly in destinations where Latino communities are newer and/or smaller but hold the potential to swing election results (Barreto, Collingwood, and Manzano 2010; Barreto and Segura 2014).

The best method of mobilizing Latinos, however, is still the subject of debate among academics and practitioners, and the answer may be multifaceted. Latinos who live in new destinations or areas where they are a small proportion of the population may respond differently to mobilization efforts compared to Latinos who live in areas with larger and long-established ethnic communities. Latino politics scholars have long noted that Latinos are not a monolithic group and, among other in-group variations, environmental factors impact their political attitudes and behavior, including having a strong collective identity and the degree to which the area is hospitable to or hostile toward Latinos (Beuker 2013, García Bedolla 2005, Jones-Correa 2001). As Fraga (2018) notes, the same GOTV effort may be less effective in a low-density context compared to a high-density context because the contacted voter knows that their group has less potential power to exercise.

In the experiments described here, we explore the efficacy of bilingual and English-only communication to turn out Latino voters in New Jersey, North Carolina, and Virginia: states with smaller but still potentially electorally powerful Latino populations. These experiments comparing bilingual and English-only communication do not cover the diversity of Latino voters across the United States, but begin to fill a gap in studying Latino voter mobilization. In the low-salience 2015 state legislative elections in New Jersey and Virginia, both treatments increased turnout compared to the control group, and the monolingual English version was more effective at increasing turnout than the bilingual version. These results are replicated in the high salience 2016 general election in North Carolina. The results of these three field experiments indicate a need for more research about where, when, and why the efficacy of bilingual and English-only communication may vary across diverse demographic and political contexts across the United States. A unique design feature of the New Jersey experiment also suggests investigating micro-context within households could provide important insights about when and why bilingual or English-only communication will be more effective.

Past field experiments have established that Latinos are mobilized when encouraged to vote in their preferred language. Multiple field experiments confirm that Latino voters are mobilized by high-quality door-to-door campaigns and telephone efforts, which include an ability by canvassers to communicate in the preferred language of each voter (García Bedolla and Michelson 2012; Green and Gerber 2019; Matland and Murray 2012; Ramírez 2007; Valenzuela and Michelson 2016). Language preference can be determined quickly when conducting interpersonal interactions on the phone or at the door. More recent scholarship has tested the effect of language-of-outreach to Latino voters using television advertisements, radio advertisements, and mailers. When mobilization messages are delivered via Spanish- or English-

language television or radio ads, communication can easily match the language preferences of the target audience because the recipient of the message is opting to tune in to media in their preferred language. Studies of these forms of outreach consistently show that language matters, whether the encouragement to vote is delivered via television advertisements (Abrajano 2010; DeFrancesco Soto and Merolla 2006) or radio advertisements (Panagopoulos and Green 2011).

What is less well understood, and the debate we contribute to with this research, is how best to reach out to Latinos when their language preferences are less certain—such as when using mailers to encourage voting. When mobilization efforts are conducted using direct mail, decisions about the most effective language of outreach must be made without reliable information about the language preference of the target voter. Civic and political organizations using mailers to increase Latino turnout frequently use bilingual mailers. However, most of the scholarly debate is about monolingual Spanish-language outreach via interpersonal contact, radio, and TV, and not about the effectiveness of bilingual outreach.

Below, we review existing relevant studies, a description of our field experiments and our results, then move to a discussion of the questions for future raised by these results.

Latino Mobilization Efforts and the Role of Language of Outreach

Spanish-language outreach is an effective method of mobilizing Spanish-dominant Latino citizens. In-language outreach, including bilingual mailers, is meant to convey a message of cultural sensitivity and inclusion to Latino voters (Abrajano 2010; Valenzuela and Michelson 2016). Bueker (2013: 392) notes: "Latino-specific and Spanish-language advertisements are intended... to tap into a collective Latino consciousness and create a connection between the candidate and the Latino community." When a candidate or campaign makes an effort to reach out in Spanish to potential Latino voters, as Jackie Kennedy did in her famous 1960 *Querido*

Amigos television advertisement, they are signaling to Latino voters that they are valued. Flores and Coppock (2018) exposed an online sample of bilingual Latinos to either an English-language or Spanish-language version of an otherwise identical television advertisement for Jeb Bush. They find that bilingual subjects who saw the Spanish-language ad were 5-6 percentage points more likely to prefer Bush, and more likely to say that they liked Bush and that he cared about "people like them." Collingwood (2019) finds that Latinos prefer an Anglo candidate who airs ads in Spanish, especially among those with stronger feelings of linked fate and who are closer to the immigration experience (e.g., 1st generation). Overall, there is considerable evidence that Spanish-language outreach is seen favorably by Latino voters.

However, bilingual and Spanish-language communication may be less effective if some Latinos believe that their citizenship or legitimacy is being challenged—in that they are assumed to not understand English—or if they perceive the messaging to be pandering (Callahan 2004, Anguiano 2016; Lavariega Monforti et al. 2013) or as inauthentic (Collingwood 2019). As noted by one of Callahan's survey respondents: "I think that it insults the intelligence of native Spanish speakers to be only spoken to in Spanish; just because they speak Spanish more fluently does not mean that they cannot comprehend a different language" (2004: 26).

Further, Latinos in the U.S. who are voting-age citizens are more likely to be native-born rather than naturalized citizens, and thus are likely to be fluent in English (Hopkins 2011, Portes and Hao 1998), and native-born Latinos are more likely to respond to encouragements to vote compared to naturalized Latinos even when mobilization messages are delivered in the voter's language of preference (Michelson and García Bedolla 2014). In sum, past scholarship suggests that English-language GOTV messages may be more effective when language preference information is unavailable given the likelihood that many of those most likely to respond to those messages (native-born Latinos) are English dominant. English-only materials may also be perceived as more "official" (Valdes and Seoane 1995) or as the language more appropriate for consuming political information (Subervi-Vélez 2008).

Most relevant to our experiments are previous non-partisan voter mobilization field experiments using mailings to target Latino voters. Abrajano and Panagopoulos (2011) conduct a direct test of monolingual English postcards vs. monolingual Spanish postcards in an experiment conducted during a local special election in Queens, New York, in February 2009. The Englishlanguage postcards were more effective, especially when delivered to English-dominant Latinos, while the Spanish-language postcards were only effective when delivered to low voting propensity Spanish-dominant Latinos. Binder et al. (2014) conducted a postcard-based GOTV experiment in San Bernardino, California for the June 2010 primary election, also using monolingual English and monolingual Spanish postcards delivered to Latino registered voters. The English-language postcards were effective only for English-dominant Latinos, while the Spanish-language postcards did not increase turnout, even among Spanish-dominant recipients.

Since these previous mail experiments have found monolingual-Spanish materials not to be as effective as monolingual-English mailings, including monolingual-Spanish materials in additional field experiments raises ethical concerns. Based on these concerns, monolingual Spanish materials are not deployed in our experiments.

A consistent takeaway from prior experiments is that language preference matters: outreach to Latino voters is much more likely to generate increases in turnout if delivered in their preferred language. However, data on language preference is often incomplete and inaccurate, especially in areas where Latinos are a smaller proportion of the population.1 Due to incompleteness and skepticism about accuracy, many civic and political organizations, including the groups we cooperated with in the experiments described here, seek alternatives to relying on the available language preference data. Our experiments are motivated by the potential ability of bilingual communication to reach out to message recipients in a language they prefer when language preference is unknown.

Two published experiments have tested bilingual mailers to Latinos, although with mixed results and without comparison to either monolingual English or Spanish-language mailers. Aggregating data from six locations during the November 2002 elections, all with large and longstanding Latino communities, Ramírez (2005) finds little evidence that multiple bilingual mailers increased turnout. In contrast, Matland and Murray (2011) find a bilingual mailer sent during the November 2004 election increased Latino voter turnout in the border town of Brownsville, Texas.

In sum, previous scholarship on mobilizing Latino voters using mailings proscribes Spanish-only mailers as an ineffective use of resources but does not clarify whether monolingual English or bilingual mailers might be more effective, and for which subsets of the Latino electorate. Bilingual mailers might be seen as more culturally competent among Latinos with a strong sense of linked fate or who are less acculturated, but Latinos in newer destinations or where the community is smaller may be more receptive to outreach that communicates to them

¹ Proxies for likely language preference available in voter files, such as nativity, risk reaching out to voters in a language other than the one they prefer (Valenzuela and Michelson 2016; García Bedolla and Michelson 2012). Using aggregate statistics about language use (e.g. Census data) involves an ecological fallacy about individuals (US Census 2015), and this ecological fallacy may increase where Latinos are a smaller proportion of the population. Commercial data indicating language preference is not available for all households, and risks an ecological fallacy about within household preferences.

as Americans (i.e., in English). This pattern would be consistent with findings that appeals to Latinos to vote from a "Latino Voter Project" are more effective among less politically incorporated and lower resourced Latino registered voters while appeals from an "American Voter Project" are more effective among more politically incorporated Latinos (Valenzuela and Michelson 2016).

Based on previous scholarship, there are competing theoretical arguments to support a stronger effect of monolingual English mailers or bilingual mailers. On the one hand, Latinos in these communities, even if they are proficient in English, may be Spanish-language dominant and/or have a stronger sense of linked fate and thus may view bilingual mailers as demonstrating cultural competency and sensitivity. The bilingual treatment should also cause a larger increase in turnout if provision of the treatment in the recipient's language of choice leads to greater comprehension of the message and logistical information and stronger affective response towards voting (Coronel, Amill, and Drouin 2019). On the other hand, Latinos in smaller communities (such as those examined in the experiments described here) may view English materials as more official. If they are English-language dominant, including native-born citizens or more acculturated immigrants, they may consider bilingual mailers to be pandering, insulting, or inauthentic. The monolingual English mailer may also be more effective because it is shorter and less visually complex while the bilingual letter entails a higher cognitive burden, thereby reducing compliance (reading) and/or engaged processing (retention) and also indicating that voting entails greater difficulty or burden (Alter and Oppenheimer 2008; Bless and Schwarz 2010; Coronel, Amill, and Drouin 2019; Song and Schwarz 2008).

Field Experiments on Mobilization when Latino Population Share is Small

We tested these competing expectations about English-monolingual and bilingual mailers

with two rounds of large-scale randomized field experiments in statewide general elections, in New Jersey and Virginia in 2015 and in North Carolina in 2016. As Latino population and political power grows across the country, civic and political organizations invest more in voter mobilization and other forms of political engagement. The field experiments were conducted in partnership with non-partisan civic organizations seeking to increase turnout. Our partner organizations' mobilization efforts reflects the trend of more attention to Latino political engagement across a variety of jurisdictions. These experiments expand the geographic, demographic, and socio-political context of field experiments on Latino mobilization. While most research on Latino mobilization has occurred in jurisdictions with a large proportion of Latino residents, our partner organizations sought to increase Latino participation in state and local elections in states with small and relatively dispersed proportion of Latinos and a very different social and political context.

The 2010 Census enumerated 50.5 million Latinos in the United States; three states with the largest Latino populations account for more than half of the total: California (14 million), Texas (9.5 million), and Florida (4.2 million) (US Census 2011). In these states Latinos exert considerable electoral power as a large proportion of the electorate; the share of citizen voting-age population in California = 29%, Texas = 29%, and Florida = 19% (US Census 2016). Much of the research about mobilizing Latinos has been conducted in these high-density contexts. Larger in-group populations have been shown to have a variety of effects on ethnic identity (e.g. Wilcox-Archuleta 2018; Barreto and Segura 2014; Barreto, Segura and Woods 2004; Bledsoe et al. 1995; Branton 2007; Gay 2004; Lau 1989). Most importantly for our purpose, higher Latino population proportion is likely to be correlated with higher levels of Spanish-language communication in family, community, and business settings (Jenkins 2018).

In contrast, the three states where our state-based partner organizations sought to increase turnout among Latino voters have much smaller Latino populations: 1.5 million in New Jersey and fewer than one million each in North Carolina and Virginia (US Census 2011). Latinos are also a smaller proportion of the population in these three states; the share of citizen voting-age population in New Jersey = 14%, North Carolina = 4%, and Virginia = 5% (US Census 2016). That said, elections are often won at the margins, and Latinos in the states where our experiments were conducted are receiving increasing attention as potentially powerful blocs in these states with frequent closely contested elections. Rapid Latino population growth in these and other new destination states will make Latinos an increasingly large portion of those state electorates over time.

Beyond the simple principle of not missing opportunities to conduct robust field experiments, the unusual context for studying Latino mobilization is theoretically valuable because Latino identity and political engagement are likely to differ across context. Demographic, social, cultural, or political characteristics may shape the results of our experiments. The mobilization of all voters is important for the health of democracy, especially voters from historically marginalized communities, in all states. Our results most strongly speak to contexts where Latinos are not a large proportion of the electorate. In addition, our results suggest a need for further research into where, when, and why bilingual mailers may be more effective. Studying how mobilization works in these contexts complements studies of jurisdictions where Latinos make up a larger portion of the electorate and enhances our theoretical understanding of political communication and political behavior.

Downstream Effects in Future Elections

The considerable GOTV literature has generated other robust findings that we also test in

these experiments. Downstream effects are when the increase in voter turnout produced within the treatment group in the election immediately following treatment persist in subsequent ("downstream") elections (Sondheimer 2011). The existing research on downstream effects suggests voter mobilization treatments can have persistent effects: voters assigned to social pressure treatments continue to be more likely to vote years after the original social pressure mailing (Davenport et al. 2010; Coppock and Green 2016; Rogers et al. 2017). Further, Rogers et al. (2017) find that the downstream effect of their social pressure mailers was due to habit formation, not to increased attention from subsequent campaigns. Thus, downstream effects have important theoretical and practical implications for increasing long-term voter participation and reducing the need for repeated, costly voter mobilization efforts. However, research on downstream effects of voter mobilization experiments is sparse, so replication across different political contexts and populations is valuable.

Spillover Effects within Households

Another notable finding from previous experiments is that violations of the stable unit treatment value assumption (SUTVA) can be modeled to measure spillover effects on others in the household. Spillover effects are when the increase in voter turnout produced for one individual in a household has the additional effect of increasing the likelihood of turnout among household members not included in the mobilization effort. Past voter mobilization experiments have identified significant differences across household size in voter mobilization effects on the targeted voters, and attributed this heterogeneity to intra-household communication dynamics (Nickerson and Rogers 2010). Explicitly examining whether treatment effects spillover from one member of a household to another member of a household, Nickerson (2008) found that the effects of door-to-door canvassing on two-voter households are transmitted from the contacted household member to the second household member. Sinclair, McConnell, and Green (2012) find household spillover effects using direct mail treatments, indicating spillover occurs with the type of treatments used in our experiments.

The potential of household spillover effects may have important additional implications in multilingual, multicultural households where not all residents may feel the political process to be as accessible. Many Latinos live in mixed households, which may include residents with varied English proficiency. In these households, children are often enlisted to translate for their parents, and this language brokering may generate civic engagement spillover effects (Terriquez and Kwan 2015; Bloemraad and Trost 2008).

Hypotheses

We derive four testable hypotheses from our review of theory and empirical findings from prior research. We hypothesize that both the monolingual English and bilingual mailings will increase turnout compared to the control group (H₁) but based on previous scholarship do not predict which will be more effective (H₂). We further expect that treatment effects will generate downstream (H₃) and spillover (H₄) effects. More formally:

*H*1: *The mailings will increase turnout compared to the control group.*

H2: The treatment effect of bilingual mailings will differ from monolingual English mailings (two-sided).

H3: The treatment effects of each mailing will persist in downstream elections.

*H*₄: *The treatment effect of each mailing will be transmitted (spillover) to other members of the household of a mailing recipient.*

Design of Experiments

We conducted three large field experiments in New Jersey and Virginia in the 2015 state legislative general elections and North Carolina in the 2016 presidential general election. Each

experiment was conducted in partnership with a non-partisan civic organization in each state.² The three experiments used nearly identical treatments and highly similar protocols for selecting the targeted population, random assignment, and measurement of voter turnout.³

One key difference across the experiments is electoral context. The New Jersey and Virginia experiments in 2015 were conducted in low-salience electoral contexts: the November general elections for state legislature.⁴ The North Carolina 2016 experiment replicates the experiment in a very high salience election with hotly contested races for president, governor, and the U.S. Senate plus a full slate of additional federal, state, and local offices.

Treatments. The three experiments use similar treatment mailings based on Panagopoulos's (2011) gratitude social pressure mechanism. The monolingual English letter is based on our partner organizations' past field experiments to refine the gratitude social pressure treatment language. The letter began by thanking the recipient for their most recent voting activity or for becoming registered to vote. It then included a table of several past elections that indicated whether or not the voter cast a ballot, the "active ingredient" in social pressure treatments (Mann 2010). The letter also included a descriptive norm: "many people like you will be voting" (Gerber and Rogers 2009) and information about voting hours and locations. In 2016,

² Each organization runs voter mobilization efforts to increase participation in state elections. Our agreement with these organizations guaranteed the right to publish the results of the experiments without restriction to mitigate the risk of publication bias (Hyde and Nickerson 2016).

³ These three experiments were not formally pre-registered. The analyses in the paper and Supplemental Online Materials are each based on the randomization process (e.g. blocked assignment, spillover in New Jersey). The downstream analysis of the 2015 experiments was not part of their original analysis plan, but was added to the analysis plan when the 2016 replication was planned.

⁴ Increasing participation in low salience elections is relatively easy, which can be beneficial for the internal validity of comparing treatments but treatment effects from the same treatment may be markedly reduced in high salience elections (Rogers et al. 2017).

the letter was altered slightly to encourage early voting. The 2016 experiment also differed in that two letters were sent, rather than just one. Samples of the letters are in the Supplemental Online Materials [SOM].

The bilingual version of the letter presented a Spanish translation below the English, in italics to make the two languages visually distinct, consistent with guidelines for bilingual materials from the US Election Assistance Commission (2007). The translation was done by professional translation service, and then reviewed by the research team and our partner organizations.

An added complication of testing a bilingual mailer vs. a monolingual English mailer is that the former will by necessity be twice as long. The addition of a second language and doubling the text means several mechanisms simultaneously shape the impact of the Bilingual treatment relative to the monolingual English treatment, as noted earlier. Future research could attempt to identify the contributions of mechanisms related text length or the added language, but doing so requires changing the content of one treatment: either shortening the content in both English and Spanish for the bilingual treatment or lengthening the content in the monolingual treatment. However, causal inferences about length or added language would be confounded by the change in content. Alternative formats of the Bilingual treatment (e.g. different languages on front and back of sheet, languages on separate sheets) might mitigate or increase the impact of these features of bilingual mailings but would still involve encountering longer text and two languages. Future research should explore whether formats that allow language choice are more effective than the simultaneous format used in our experiments.

The experiments do not include a monolingual Spanish treatment due to ethical concerns, as noted earlier. A full factorial research design including a monolingual Spanish treatment has

desirable characteristics, but not sufficient to outweigh countervailing ethical principles about conducting field experiments. Since past research comparing monolingual English and Spanish treatments creates a strong expectation that a monolingual Spanish treatment would be less effective, scholars are ethically obligated to share this expectation with partner organizations. Since our partner organizations' missions are maximizing turnout, they had no interest in a deploying a treatment where there is clear empirical evidence of being suboptimal. Trying to convince our partner organizations to nevertheless use a monolingual Spanish treatment would amount to manipulating real world activity (and outcomes) solely for research design purposes, and we believe doing so is unethical. In contrast, the comparison of English and Bilingual treatments is ethically appropriate because there was uncertainty based on competing theoretical expectations, competing expectations among practitioners, and absence of empirical evidence about the relative effectiveness of Bilingual vs. monolingual English treatments.

Targeted Population and Random Assignment. The population for each experiment was drawn from the list of registered voters in each state maintained by Catalist LLC, a firm specializing in voter data. Our partner organization sought to mobilize registered who were coded as Hispanic by Catalist's ethnicity algorithm provided by CPM Ethnics. This algorithm utilizes linguistic information in voter names and Census data for the area where the voter lives to generate predictions of the ethnicity and nation of origin of all registrants on Catalist's national voter file (Ansolabehere and Hersh 2012; Fraga 2016; Fraga and Merseth 2016).5 Our

⁵ Fraga (2016) reports the Catalist Ethnicity codes were validated as 91.4% accurate with selfreported race and ethnicity from surveys. Ansolabehere and Hersh (2012) further note that Catalist's prediction model finished second in the 2011 MITRE Multi-Cultural Name Matching Challenge against data companies and teams from around the world. This performance suggests Catalist's codes are among the best available data. Information about Catalist ethnicity codes is available at http://cpm-technologies.com/cpmEthnics.html.

partner organizations are interested in mobilizing voters who otherwise would not participate. Our partner organization in 2015 selected Hispanic registered voters with a vote propensity between 10 and 75 on Catalist's 2014 voter propensity model. Our partner organization in 2016 selected Hispanic registered voters with a vote propensity between 0 and 75 on Catalist's 2016 voter propensity model. In addition, the voter file provides covariates relevant to voting including age, gender, and turnout in past elections. Replication data and code for random assignment and analyses are available at [*redacted*].

Random assignment was conducted using the automated re-randomization procedure from Kennedy and Mann (2015) to ensure balance on observable covariates prior to treatment delivery (details in SOM).6 In Virginia and North Carolina, the random assignment was conducted at the household level, defined by unique mailing address, to reduce the risk of crosscontamination among experimental conditions. Therefore, to account for the likelihood of intrahousehold correlation in behavior, the hypothesis testing using randomization inference accounts for the possibility of intra-household correlation of behavior – similar to using clustered standard errors in simple regression. In New Jersey, one individual was randomly selected in each household for assignment to direct treatment, while the remaining individuals in the household are used to measure spillover effects. Therefore, in New Jersey, the estimation of direct treatment effects does not need to account for household assignment but the randomization inference

⁶ SOM Tables 1a-c shows that each experiment is balanced on the covariates available in the voter registration records, as expected. Since the re-randomization procedure truncates the distribution of possible random assignment, hypothesis testing requires randomization inference to properly estimate p-values (Gerber and Green 2012). Using randomization inference tests the sharp null of no effect for any individual in the experimental population. The randomization inference used for the original random assignment to construct the distribution of potential outcomes. Using this distribution of potential outcomes, all p-values report two-tailed calculations of probability of the observed outcome under the assumption of zero treatment effect.

hypothesis testing for spillover effects accounts for potential intra-household correlation of behavior since there are multiple spillover records in some households. See SOM for further details of the household level random assignment.

Table 1 shows the quantities assigned to the control, English treatment, and bilingual treatment in each experiment. Reflecting our partner organizations' available resources for treatment, the proportions assigned to treatment and control were different for each experiment. Table 1 also reports the Minimum Detectable Effect of each treatment versus the control group and of the differences between the two treatments based on statistical power of 0.8 and the actual turnout in the control group. More details about the random assignment and statistical power for each experiment are in the SOM.

 Table 1: Assignment to Treatment and Control Conditions, Bilingual and Monolingual English Mailer Experiments with

 Minimum Detectable Effects

	Control	Bilingual	Monolingual English	Minimum Detectable Effect: Treatment vs. Control	Minimum Detectable Effect: Bilingual vs. English
New Jersey 2015 (one voter/household)	125,597	26,898	26,900	0.60 % pts.	0.77 % pts.
Virginia 2015 (voters; households)	23,978; 18,868	23,999; 18,869	24,041; 18,868	0.92 % pts.	0.92 % pts.
North Carolina 2016 (voters; households)	9,524; 7,832	36,426; 30,760	36,567; 30,764	1.78 % pts.	1.41 % pts.

Note: Randomization in each state stratified by Catalyst ethic-origin codes (Mexican American, Puerto Rican, and Other Latino). Minimum Detectable Effects in percentage points calculated for power of 0.8 using actual turnout in control group. See SOM for additional details on random assignment and power. Measurement of Voter Turnout. Our dependent variable is the administrative records of individual voter turnout from state election officials. These data are matched to our experimental populations after each election using a unique record identifier from the voter file. Because administrative removal from the voter rolls is correlated with non-voting, any record that disappears from the voter file following the election is treated as a non-voter to avoid biasing the results.

Measurement of Treatment Compliance. Consistent with other experiments delivering treatments by mail, the treatment effects are estimated based on the intent-to-treat from random assignment (Gerber and Green 2012; Green and Gerber 2019). It is impossible to accurately measure whether intended recipients receive, read, and process treatments delivered by mail (i.e. treatment compliance), so the *causal average complier effect* (also known as *treatment-on-treated effect*) cannot be estimated.

Results

Overall Treatment Effect. Figure 1 shows positive treatment effects for each of the three experiments. The top panel shows the New Jersey 2015 experiment. The average 2015 general election turnout in the control group for this odd-year legislative election was 11.5%.7 In the New Jersey experiment, the bilingual mailing increased turnout by 2.2 percentage points ($p_{ate}<0.001$) and the English mailing increased turnout by 3.0 percentage points ($p_{ate}<0.001$). The 0.8 percentage point difference between the two mailings is statistically significant ($p_{difference}=0.001$).

⁷ Control group turnout in each strata of the New Jersey experiment: 10.3% among Mexican Americans, 10.9% among Puerto Ricans, and 13.0% among Other Latinos.

The middle panel shows the Virginia 2015 experiment. The 2015 general election turnout in the control group was also 11.5%. In the Virginia experiment, the bilingual mailing increased turnout by 1.4 percentage points ($p_{ate}<0.001$) and the English mailing increased turnout by 1.9 percentage points ($p_{ate}<0.001$). Again, the English mailing has a larger impact, although the 0.5 percentage point difference is only marginally statistically significant ($p_{difference}=0.080$).

The 2016 North Carolina experiment (bottom panel) replicates the results in a high salience electoral context: the average 2016 general election turnout in the control group was 48.7%. The English mailing increased turnout by 1.2 percentage points ($p_{ate}=0.050$). The bilingual mailing in North Carolina 2016 failed to reach statistical significance ($p_{ate}=0.240$), but this treatment effect (0.7 percentage points) is almost twice the magnitude typical of social pressure mailings in Presidential elections (Green and Gerber 2019). The 0.6 percentage point difference between the treatments is consistent with the first two experiments, but not statistically significant ($p_{difference}=0.184$).

Since the three experiments were conducted in dissimilar contexts, we are cautious about pooling the results. However, some readers may find the comparison of precision weighted averages useful. The precision weighted average effects for these three experiments are: English mailing = 2.1 percentage points (p= 0.054) and bilingual mailing = 1.6 percentage points (p=0.064). Keeping in mind that past research does not use random assignment to compare English and bilingual treatments, extending the meta-analysis to past research using either English mailings (Abrajano and Panagopoulos 2011; Binder et al. 2014) or bilingual mailings (Matland and Murray 2012; Ramírez 2005) does not substantively change the precision weighted average for each treatment: English mailing = 1.9 percentage points (p= 0.009) and bilingual mailing = 1.3 percentage points (p=0.057).

These three experiments provide strong support for Hypothesis 1's basic expectation that gratitude social pressure mailings will increase turnout among Latinos. More importantly, the experiments support Hypothesis 2's expectation of differences between English and bilingual mailings among Latinos. Across our three experiments, the increase in turnout caused by the English mailings is 35%-70% larger than the increase caused by the bilingual mailings.



Figure 1: Intent-to-Treat Effects for English and Bilingual Mailings

Note: Full results in SOM Table 2.

Downstream Effects. In New Jersey and Virginia, we examine the treatment effects observed in the 2016 primary and general elections (Figure 2) to determine whether the 2015 treatments increase turnout in later elections. The 2016 federal elections had much higher turnout than the 2015 state legislative elections (11.5% in both states): for the control group, turnout in the 2016 primary elections was 21.8% in New Jersey and 24.0% in Virginia; turnout in the 2016 general elections was 68.4% in New Jersey and 67.2% in Virginia.

In New Jersey, the English mailing treatment effect was smaller but statistically significant in both the 2016 primary (0.7 percentage points, pate=0.016; 23% of the magnitude in the 2015 general election) and general election (0.9 percentage points, pate<0.001; 30% of the magnitude in the 2015 general election). The bilingual mailing treatment effect was also smaller but statistically significant in the 2016 primary (0.6 percentage points, pate=0.020; 29% of the magnitude in the 2015 general election). However, the bilingual mailing did not have a statistically significant downstream effect in the 2016 general election (0.3 percentage points, pate=0.350). In Virginia, there does not appear to be any effect in either downstream election from either treatment. These split results offer only partial, and likely conditional, support for Hypothesis 3's expectation of treatment effects in downstream elections.

One potential explanation for the difference in downstream effects is the electoral context of the downstream elections. The 2016 primary and general elections were competitive in Virginia, but not in New Jersey. Coppock and Green (2016) suggest the type of election in which the original treatment was delivered helps explain variation in downstream effects. However, the New Jersey and Virginia 2015 elections are very similar state legislative elections, so Coppock and Green's propositions about the original type of election do not apply. However, the characteristics of the downstream election seem likely to condition the potential for downstream

effects. Competitive elections have a salience driven increase in participation and greater voter mobilization activity by candidates, parties, and other political organizations. Both aspects of competitive elections attenuate the ability to observe an increase in voter turnout. We cannot test this proposition with data that suggested it, but we note that it is another important dimension to understand when and why prior voting influences subsequent participation.



Figure 2: Downstream Intent-to-Treat Effects: Effect on 2016 Turnout from 2015 Treatments

Note: Full results in SOM Table 3.

Spillover. The 2015 New Jersey experiment was designed to measure the spillover of treatment effects from the randomly selected member of a household to other members of the household. This analysis is necessarily limited to multi-target households. The experimental population in New Jersey had 49,095 households with multiple targets, with 66,205 non-targeted individuals in these households. The top of Figure 3 reports the direct treatment effects on the randomly selected individuals in each multi-target household to whom the mailing was addressed. Relative to the control group turnout of 10.1%, both treatments significantly increased turnout (English mailing = 2.2 percentage points, $p_{ate} < 0.001$; bilingual mailing = 2.3 percentage points, pate<0.001; see SOM Table 5). Unlike the overall results above for all households, the difference between the two treatments is not statistically significant in multi-target households (pdifference=0.779). The difference between treatments in the full experimental population is driven by a 1.2 percentage point difference in single target households (*pdifference*<0.001; English mailing = 3.2 percentage points, $p_{ate} < 0.001$; bilingual mailing = 2.0 percentage points, $p_{ate} < 0.001$; see SOM Table 5). The convergence between the two treatments in multi-voter households is due to a significant drop (pheterogeneity=0.018; see SOM Table 5) in the effect of the English treatment from single target households (3.2 percentage points) to multi-target households (2.2 percentage points) while the bilingual treatment is essentially unchanged (2.0 percentage points and 2.3 percentage points, respectively). This heterogeneity across number of targets in a household for the English treatment effect suggests a need for future research on household composition and language preference.

The lower portion of Figure 3 shows about 40% of each direct treatment effect was transmitted to other household members. This indirect spillover treatment effect of the bilingual mailing was 1.0 percentage points (pate=0.002) and the indirect treatment effect of the English

mailing was 0.8 percentage points (pare=0.011). As with the direct effect, the difference between the spillover effects of the English mailing and bilingual mailing is not significant (pdifference=0.773). This spillover of treatment effects supports the expectation of Hypothesis 4 and is consistent with past research on voter mobilization mailings (Nickerson 2008; Sinclair, McConnell, and Green 2012).



Figure 3: Direct and Spillover Treatment Effects in Multiple Target Households in New Jersey Experiment

Discussion

These three large field experiments provide important insights into the use of bilingual political communication for Latino voters. As a starting point, all three experiments provide clear evidence that mailings with social pressure messages increase turnout among Latinos whether

Note: Full results in SOM Table 6.

the mailings use English only or both English and Spanish. This replicates past findings of social pressure mailings and extends past results by focusing specifically on Latinos. Notably, this evidence appears in a high salience Presidential general election context (North Carolina 2016) as well as lower salience odd-year statewide elections (New Jersey and Virginia 2015). The size of these effects is relatively small; however, in an era of closely contested elections with sharp social group partisan cleavages, small differences in voter turnout can be of critical importance.

Looking at the downstream effects of the 2015 experiments on turnout in 2016 reveals persistence in New Jersey, but not Virginia. The disparate downstream effects may be due to levels of electoral competition in 2016: Virginia had highly competitive Presidential primary and general elections, while New Jersey was not heavily contested in either election.

The New Jersey 2015 experiment also replicates the findings of prior research with evidence that approximately 40% of the treatment effect on targeted individuals is transmitted to others in their household. The similarity of spillover for both treatments suggests the mechanism underlying intra-household transmission is unrelated to use English only or both English and Spanish, although further research is needed. One possible explanation for the lack of different effects is that the interpersonal communication between household members that underlies the spillover would likely be conducted in the preferred language of those individuals, which may or may not reflect the language of the assigned mailer. The analysis also raises another puzzle about context for future research: there is significant heterogeneity in the effect of the bilingual treatment conditional on whether a household contains one or multiple low voting propensity Latino voters. Confirming and identifying the reason for this household size variation with additional future experiments could provide valuable insights about communication and behavior among Latinos and more generally.

Our central research question in designing these experiments was whether a bilingual mailing would be more effective than a mailing using only English when seeking to mobilize Latinos to vote in states where Latinos are a small proportion of the electorate. We did not include mailings using only Spanish since past research has found these to be less effective. In these three experiments the English mailing is generally more effective at mobilizing Latinos than the bilingual mailing.

However, the contexts in which these experiments were conducted are not representative of Latinos across the country. Thus, it remains possible that bilingual mailings will be more effective in other demographic and political contexts. As noted earlier, the effectiveness of monolingual English and bilingual mailers may differ based on the characteristics of targeted Latino voters, e.g. that more acculturated and politically incorporated Latinos may be more responsive to monolingual English outreach, while Latinos with a stronger sense of Latino linked fate or with lower levels of resources may be more receptive to bilingual mailers. Future research is needed to explore this possibility and other alternative explanations. Different results might occur in different geographic contexts, particularly in locations where Latinos are a higher proportion of the population. Different results might also occur if the mailers are sent from different types of organizations. Previous GOTV experiments aimed at increasing Latino turnout have found that messengers representing a trusted local ethnic organization can be very effective (García Bedolla and Michelson 2012). It is also possible that the weaker effect of the bilingual mailers reflects their length or visual complexity as compared to the English-only letters. Future experiments should consider these and other alternative explanations.

Given the frequent use of bilingual political communication to reach Latinos in the US, the lack of prior field experiments comparing English and bilingual mailings was a notable gap

in political science research. The replication of results across three experiments begins to fill this gap. That said, these three experiments do not cover the diversity of Latino voters across the United States. Scholars must be attentive to the context in which specific demographic groups are examined. These experiments provide causal evidence that bilingual communication may not be the most efficacious voter mobilization communication in at least some contexts. Since these experiments were conducted in similar contexts – and that context differs from much of the research on Latino mobilization – further research is needed to explore bilingual vs. English only communication. In addition, further research is needed to examine the effect of using bilingual materials in other types of political communication, especially persuasive campaign communication.

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