NEWS COVERAGE AND CANDIDATE PREFERENCES: USING MEDIA CONTENT TO PREDICT ELECTION POLL MOVEMENT

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Abstract. Using content analysis of television coverage of the incumbent and challenger in the 2012 U.S. Presidential election, this paper analyzes the effects of day-to-day coverage of the candidates on candidate support. While previous observational studies have failed to find a significant effect of media coverage on candidate support – a finding at odds with experimental research on the same topic – our results show a fleeting, but substantively important effect of media coverage on support for the candidates.

Keywords: Election Forecasting, Media Effects, U.S. Presidential Elections, Content Analysis

1. INTRODUCTION

Most work on election forecasting deals with the question of how to translate public opinion into probable results at the ballot box. However, it may be possible to simplify these models by taking out the middleman – the voter – and concentrating on what information voters receive about the candidates in an election. If the information that voters are getting about the candidates can be measured, it becomes possible to predict the movement in polls as that information works its way through the polity.

This sort of model is somewhat at odds with traditional research on the effects of media on public opinion, the results of which have been mixed, at best. The earliest studies – motivated by the fear that propaganda techniques could be used

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as effectively in the U.S. as in Fascist European states (i.e., Lazarsfeld, Berelson and Gaudet 1944; Berelson, Lazarsfeld and McPhee 1954) – concluded that there was no real effect of the media on political preferences. Later research concluded that this lack of effect was due to strong prior preferences of individuals, driven by partisanship, class, race, religion or other factors, which held enough sway over the individual that media coverage had little room to change voters’ opinions (Campbell et al. 1960). It was argued that even the evidence that some individuals, such as weak partisans, could be swayed by media coverage (Hershey 1989; Iyengar and Kinder 1987) more likely signalled activation of partisanship than real shifts in opinion (Finkel 1993). So, for instance, Alvarez (1998) shows that voters learn about the candidates over the course of the election, and then vote in line with what they’ve learned: the process is more about recognizing which candidate the individual prefers than changing minds.

It would be wrong to think of these sorts of substantial agenda-setting effects as “minimal”, as so many earlier studies of media effects characterized them (Bennett and Iyengar 2008); the effects are more subtle than the direct influence that early researchers were worried about (as in Cohen 2008). Reinforcing voter’s beliefs may be important (Holbert, Garrett and Gleason 2008), but it isn’t something with which the Columbia researchers would have been overly concerned. Indeed, media effects may be best characterized as a good thing: Gelman and King (1993) argue that the main function of campaigns, and the coverage thereof, is to “enlighten” voters as to their true preferences vis-à-vis the candidates. This line of thinking is bolstered by the ample evidence in the literature (Wlezien and Erikson 2002, Arceneux 2005, Erikson and Wlezien 2012) that voters change over the course of the campaign, paying more attention as the vote draws nearer, and learning more about the issue and policy stances of the candidates.

Some researchers have been able to show significant effects of highly publicized ad campaigns, as in Mendelberg’s studies of the effect of 1988’s infamous “Willie Horton” ad (Mendelberg 2001; Mendelberg 1997), but, in general, media coverage of a candidate doesn’t seem to have had much of an effect. Similarly, Kiousis (2003) found mixed evidence for changes in personal favourability of Bill Clinton related to coverage of the Lewinsky affair: the more people saw about Monica Lewinsky, the less they seemed to think of Clinton personally, and the better they thought of his job performance (though the results were not as robust as might have been hoped). The general lack of an effect should not be too surprising: after all, the people who are most engaged in the political process are those that have strong partisan attachments and thus the least likely to be swayed.

However, this line of research has not gone unchallenged. Studies in the
laboratory – most notably Iyengar and Kinder’s (1989; Iyengar, Peters and Kinder 1982; Peters, Kinder and Krosnick 1984; Krosnick and Kinder 1990; Iyengar and Simon 1993) work on how television broadcasts frame issue agendas – have demonstrated the potential impact of media content. In these studies, researchers were able to show that the media could influence the dimensions on which voters make their decisions, and thus the evaluations made. So, for instance, participants who saw a video emphasizing Jimmy Carter’s energy policy gave greater weight to their evaluation of his energy policy in their overall evaluations of Carter. However, these framing effects seemed to be short-lived (de Vreese 2004), and may be exaggerated by the use of “WEIRD” (an acronym meaning Western, Educated, Industrialized, Rich and Democratic) undergraduate student samples (Heinrich, Heine and Norenzayan 2010). More recent work on agenda-setting has looked beyond student samples to identify how the popularity of topics on social media sites are influenced by coverage in the traditional media (Groshek and Groshek 2013), though Meraz (2011), shows that the ability of television news broadcasts to set the agenda for online news sources has been decreasing, a finding that Tan and Weaver (2007) replicate for the influence of media on the U.S. Congress.

Similarly, studies of online processing (Lodge, McGraw and Stroh 1989; Lodge, Steenbergen and Brau 1995; Betsch et al 2001; Choi 2011) have found that voters are influenced by messages in the media, but this influence may be hard to pick up because voters quickly forget what led to the change in opinions. Simply put, the online processing model holds that respondents update their preferences about candidates in response to incoming information, on a unidimensional positive-negative dimension. When asked to make an evaluation of the candidate, they simply report the positivity or negativity of the online tally. As influential as the online processing model has been, it has been difficult to test outside of the lab, as there is no way to track every piece of information that voters receive about real world candidates.

Studies designed to split the difference between the experimental and observational approaches through the use of controlled field experiments have tended to show small, but significant media effects. Perhaps the best evidence about the effects of media coverage on candidate preferences comes from Gerber, Karlan and Bergan (2006). In a field experiment, they randomly assigned 1,200 households to receive a free subscription to a liberal-leaning newspaper (“The Washington Post”) or a conservative-leaning newspaper (“The Washington Times”) for a few weeks prior to a state-wide election. Those receiving the Post were a bit less than 10 points more likely to support the Democratic candidate in an upcoming gubernatorial election, though there is little evidence that their views on individual
issues changed. Dalton, Beck and Huckfeldt (1998) also find that exposure to
election coverage in newspapers can have a significant impact on public opinion. However, the fact that newspaper coverage has an impact doesn’t necessarily mean
that television coverage, while much more commonly consumed, has one as well.
A passive medium like television requires much less engagement with the information
being sent out than reading a newspaper; as such, it may well be less able to alter
political views (Druckman 2005), although there doesn’t seem to be any clear
consensus on this point (Moy et al. 2004; Mondak 1995). Moreover, there is some
question as to whether the results of experiments – field or otherwise – can be
translated into people’s everyday experience, as voters tend to actively select
information sources already in agreement with their beliefs (Mutz and Martin 2001;

Because of the field experiments, it is clear that the results of the lab studies
aren’t driven entirely by sample characteristics: media coverage can have an effect
on viewers’ evaluations of candidates and their later voting behaviour. The question,
then, is why past observational studies have failed to show the same relationship.
One reason, put forward most forcefully by Bartels (1993), is measurement error.
Bartels argues that the gulf between the laboratory and the real world can be
explained by the accuracy with which the results in each can be measured: studies
outside the lab have been subject to enormous measurement error that doesn’t plague lab work. Prior (2009), for instance, shows that many of the effects attributed
to media exposure are actually driven by differences in reports of that exposure. By
separating out television viewers and newspaper readers, Bartels is able to show that
media exposure has a significant effect on the way individuals view the candidates,
albeit one that tends to be overshadowed by initial differences among individuals.
This paper adopts a version of Bartels’ measurement error perspective on the issue:
the effect of television media coverage on intended voting behaviour is significant,
but is small and fleeting enough that measurement of the relationship generally
fails.

This sort of measurement error can also be avoided by focusing on macro-
level media exposure. Even if it is impossible to reliably estimate who is watching
what and when, it is possible to measure the availability of media sources and
messages. For instance, DellaVigna and Kaplan (2007) are able to show that media
markets who gained access to Fox News prior to the 2000 elections had more votes
for Republican candidates (an increase of between 0.4 and 0.7 percentage points)
than those media markets who did not gain access to Fox but were otherwise
equivalent. This effect seems to be due to increased turnout among conservative
voters in Democratic districts. On a larger scale, Groshek (2011) was able to show
a strong relationship between the diffusion of media sources (radio, television, and so on) and increases in social instability.

As such, the most sensible place to look for macro-level relationships between media coverage of candidates and vote choice is in the trends that have been established in the laboratory. At the proper level of measurement, the same effects found in the laboratory should be evident at the macro-level as well. This approach has already borne some fruit: Lebo and Cassino (2007) were able to demonstrate that motivated reasoning – which had been well established in the laboratory (Kunda 1990; Lodge and Taber 2000; Redlawsk 2002; Cassino, Taber and Lodge 2007) – was also present in presidential approval data, but only when the data is disaggregated by partisanship over a more than 50-year period. As Bartels argues, the quality of measurement is paramount, and as DellaVigna and Kaplan (2007) showed, effects that may be washed out in the individual level data can be easier to find in the aggregate.

2. CHARACTERISTICS OF CANDIDATE SUPPORT IN 2012

No single survey research group issued sufficient daily level data to allow a full test of the relationship between support for the two candidates and media coverage – but there were several poll aggregating services that combined all of the polls covering a certain day to create a daily moving average. All of the major aggregation services had similar results, so the one that best predicted the final margin between the two candidates (Pollster) was chosen.

In the Pollster estimate, Obama holds at least a small lead for the entire race, with a mean Obama lead of 1.63 points (standard deviation = 0.95). Over the course of the series, Obama’s overall support fluctuates between 45.1 percent and 48.3 percent (mean = 46.3, standard deviation = 0.93), while Romney’s support goes from a low of 43.8 to a high of 47.0 (mean = 44.7, standard deviation = 0.92). Support for Obama and Romney are also tightly related, such that an increase in Obama’s support leads to a corresponding decrease in Romney’s support, and vice versa: Obama and Romney’s support are correlated at \( r = +0.46 \), and changes in the series are correlated at \( r = -0.63 \).

All three of the series – support for Obama, support for Romney, and Obama’s advantage – show signs of endogeneity issues. Two techniques were used to create stationarity in the series, thus clearing out all endogenous effects in order to ascertain the effects of exogenous factors: standard ARIMA approaches and fractional integration. Tests for fractional integration show that all three show signs of fractional integration at levels of about \( d = 1.25 \), indicating a series with
exponential features. However, these tests of fractional integration can be very sensitive to the frequency of the data set, and the fact that the data is updated daily may be artificially increasing the degree of integration. As such, fractional integration controls, as well as other methods for controlling endogeneity in the series, are best used to create stationarity rather than for interpretation in their own right. When the three series are diversified by the level of fractional integration suggested by Robinson’s test (at power of 0.9), KPSS tests and a survey of auto- and partial autocorrelations show no signs of remaining endogeneity. Based on past research on presidential approval series (Lebo and Cassino 2007), it seems likely that disaggregated series of support by party would have different levels of integration, but such disaggregation is not feasible for a daily-level time series.

The same stationarity can be created through a standard ARIMA approach in all three series, with a model of $p = 0, d = 2, q = 1$. Again, KPSS and correlelograms of AC and PAC show no signs of remaining endogeneity after these steps are taken. This result corresponds to a linear exponential smoothing model (though Halkos and Kevork 2006 suggest that this might be indicative of a random walk with drift). Changes in this series are analogous to second derivatives – an increase in the series corresponds to a positive inflection in the direction of the series. In fact, the stationary version of the series is actually negatively correlated with changes in the original series ($r = -0.11$ for Obama, -0.13 for Romney, -0.20 for Obama’s advantage).

In the following analyses, two versions of the dependent variable are used. The first is simply differenced, allowing us to analyze how changes in coverage of the candidates impacts changes in support for the candidates. The second is stationary, removing all significant endogeneity from the series. The most important reason to check both is ease of interpretation. Using the differenced version of the dependent variables means that the effects can be simply interpreted as the effect of changes in coverage of the candidates on changes in their support. In contrast, the fully corrected series has a $d$ of 2, as well as a single moving average component, meaning that changes in the series correspond to changes in the slope of the trend of the series, such that negative coefficients indicate reductions in the rate of acceleration and positive coefficients indicate increases in the rate of acceleration. There is no analytical reason why these results can’t be interpreted, but they simply don’t tell us what we’re most interested in.
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Figure 1: Support for Romney and Obama in Pollster Data

Figure 2: Obama Average in Pollster Data, Corrected for Endogeneity
3. CHARACTERISTICS OF MEDIA COVERAGE IN 2012

Media coverage of the two candidates during the 2012 campaign was measured through a content analysis of all of the coverage of the candidates on ABC World News Tonight, NBC Nightly News, CBS Evening News and Fox Special Report with Bret Baier, as provided by Media Tenor. Each story was coded – as to whether it was positive, negative or neutral in its portrayal of each candidate – by human coders, who assessed each statement made about two candidates on these channels.

Over the course of the period studied (from 11 April to 28 October), there were an average of 83.8 statements per day (standard deviation = 63.0) about Obama (from a high of 351 on 23 October, the day after the final debate, to a low of just one story on 26 May), consisting of a total of 16,836 statements. The majority of these statements (60%) were coded as neutral, 29% were negative, and just 12% were positive. There were slightly fewer statements about challenger Romney: a mean of 70.5 per day (standard deviation = 54.2); these stories were 65% neutral, 19% negative and 15% positive.

The amount of coverage of the two candidates is highly correlated (r = +0.65), but there are periods in which one candidate receives far more coverage than the other for a period of a few days. Differences in coverage of the two candidates become more evident upon examining the tenor of the coverage: subtracting the number of negative stories in a day from the number of positive stories. By this measure, coverage of the two candidates is not significantly correlated (r = -0.07). Subtracting the raw number of stories has significant advantages over looking at the average valence of the stories. The primary advantage is that it reduces a bias towards extreme values on slow news days. When there are only a few statements about a candidate in the news, it is much easier to see values that are all positive or all negative, but it doesn’t make sense to attribute large values to days when there’s very little news. Looking at the difference between the number of positive and the number of negative stories accounts for both the valence of the overall media coverage as well as the volume of that coverage.

In some ways, this approach is similar to that taken by Shaw and Roberts (2000), who used human coding and internal party analyses of media coverage to predict the price of shares in a candidate in an election prediction market. Like us, they used day-by-day media coverage in their model, but failed to account for any lags in the effect of the media coverage (looking only at contemporaneous effects) and were unable to look at actual polling data, which was not yet available at the level of detail necessary.
4. HYPOTHESES

Past research leads us to three hypotheses about the effect of news coverage on support for candidates in opinion polls. First, it is expected that when news coverage and opinion change are aggregated, and the bias of individual measurement error is thus eliminated, more positive coverage should lead to increased support for that candidate. Simply put, when there is an increase in the number of positive statements about Obama in the media, Obama’s support should increase (with the same holding true for Romney).
Tab. 1: Characteristics of Positivity of Media Coverage (Positive Statements – Negative Statements)

<table>
<thead>
<tr>
<th></th>
<th>Positivity of Obama Coverage</th>
<th>Differenced Obama Coverage</th>
<th>Positivity of Romney Coverage</th>
<th>Differenced Romney Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>-80</td>
<td>-71</td>
<td>-40</td>
<td>-69</td>
</tr>
<tr>
<td>Maximum</td>
<td>24</td>
<td>58</td>
<td>40</td>
<td>37</td>
</tr>
<tr>
<td>Mean</td>
<td>-14.34</td>
<td>0.20</td>
<td>-2.81</td>
<td>0.03</td>
</tr>
<tr>
<td>10th Percentile</td>
<td>-35</td>
<td>-26.5</td>
<td>-19</td>
<td>-16.5</td>
</tr>
<tr>
<td>25th Percentile</td>
<td>-23</td>
<td>-11.5</td>
<td>-8</td>
<td>-7</td>
</tr>
<tr>
<td>Median</td>
<td>-13</td>
<td>1</td>
<td>-2</td>
<td>1</td>
</tr>
<tr>
<td>75th Percentile</td>
<td>-2</td>
<td>11.5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>90th Percentile</td>
<td>5</td>
<td>23</td>
<td>8</td>
<td>15</td>
</tr>
</tbody>
</table>

Hypothesis 1: Greater positivity in the difference between the number of positive and negative statements about the candidates in the news on a given day will increase support for that candidate.

The strong correlation between support for the two candidates also leads us to believe that an increase in the number of positive statements about one candidate should reduce support for the candidate’s opponent. One candidate’s gain is the other’s loss.

Hypothesis 2: Greater positivity in the difference between the number of positive and negative statements about a given candidate in the news on a given day will decrease support for that candidate’s opponent.

Finally, the degree of media coverage should only matter to the extent that voters are actually paying attention to the race. Public opinion surveys have routinely shown that many voters only begin paying close attention to the race during the summer before the election; as such, coverage of the candidates should have a much greater effect closer to the day of the election than it does earlier in the race.

Hypothesis 3: The positivity or negativity of statements in the media about a given candidate will have a greater impact on that candidate’s support later in the election cycle.

5. EFFECT OF MEDIA COVERAGE ON CANDIDATE SUPPORT

The first step in analyzing the relationship between media coverage and support for the candidates is to establish causation: after all, while it is conceivable that coverage is driving voter support of the candidates, it is also possible that increased
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presence in the polls leads to better coverage in the news. To determine the direction of the causality, Granger-causality Wald tests are used (Granger 1969; Sims 1972). Simply put, Granger tests are used to determine if lagged values of one variable (in this case, media coverage) are significant predictors of another variable (in this case, public support for a candidate). As Stock and Watson (2003, p. 449) put it, “if X Granger-causes Y, then X is a useful predictor of Y, given the other terms in the regression.” While Granger causation is not as strong a claim on causation as that which might be found in the laboratory, it is a much stronger case than untimed regression techniques, which have difficulty determining the order of causation, which must be supplied by theory. Once it is determined that X is Granger-causing Y, it still might be the case that a third factor might be causing both, but it cannot be the case that Y is causing X.

These tests allow us to reject the null hypothesis that coverage of Obama and Romney – measured by the difference between the number of positive and negative stories about the candidates in a day – does not Granger-cause Obama’s support in the polls (chi-square of 21.87, 14 degrees of freedom), and Obama’s advantage in the polls (chi-square of 24.78, 14 d.f.), though the results are less solid for Romney’s support (chi-square of 15.36, 14 d.f.). In addition, the Wald tests fail to reject the null hypothesis of no Granger-causation in the opposite direction. These Granger-causation tests rely on lags in the data and indicate that knowing the tenor of the coverage of a candidate predicts the advantage Obama will have in the polls 1 to 7 days later; if this is the case, causality is rather well established. In the absence of a time machine, it is unclear how a shift in candidate support could lead to better media coverage a week in advance.

The models use three dependent variables: Obama’s support in the polls, Romney’s support in the polls, and Obama’s advantage. The high degree of overall correlation between Obama and Romney’s support, as well as the correlation between changes in their support, indicate that the two series simply do not move independently of each other. As such, using support for one candidate or the other as a dependent variable would give the same results as modelling the difference between the candidates, only with smaller effects sizes. Past research would indicate that this result would be rather different if the analysis included breakdowns of support by party identification or other characteristics (Lebo and Cassino 2007), but such data is unavailable on a day-to-day level.

We analyze the data using three dependent variables: support for each of the candidates, and Obama’s advantage in the polls (Obama’s support less Romney’s). Two versions of each of these dependent variables are used: a differenced version and a fully stationary (0,2,1 ARIMA) model. Results for the first set indicate how
changes in coverage (whether the coverage is more positive or more negative than yesterday’s) impact changes in support for the candidates. The second set indicates how changes in coverage change the acceleration of the trend: positive results indicating an increasing slope, negative results indicating a decreasing slope. The second set of results also serves as a check that the results in the first set are not driven by endogeneity: as the series are fully stationary, any changes are the result of the modeled exogenous factors.

In both sets, lagged results are modelled out to seven days. Generally, surveys aggregated in the Pollster results are in the field for between 3 and 5 days, but some extend to a full week. As such, it may take that long for effects of a shift in media coverage to become evident in the poll results, and the large number of lags allows us to control for this. While it may be unlikely that media coverage on one day would lead to a change in a candidate’s poll numbers seven days later, it is entirely possible that media coverage could lead to a change in attitudes on the following day that might not be show up in polls – and in the poll aggregator used here – until five or six days later. This problem could be avoided, and a shorter number of lags used, if aggregated polls used a smaller polling window, or if there were enough polls with such small windows to allow them to be aggregated separately. Such circumstances may well arise in upcoming elections, but this sort of data is simply not sufficiently available for the 2012 Presidential race.

Results for the first set of models are striking. Changes in the positivity of coverage of Obama and Romney have significant impacts on support for the candidates at multiples lags in each model, and always in the expected directions. More positive coverage of Romney leads to decreases in Obama’s support, and more positive coverage of Obama leads to increases. For instance, the first three columns in Table 2 show the effect of a one point increase in the positivity of coverage of Obama and Romney on Obama’s advantage in the polls. One additional positive statement on day zero is expected to increase Obama’s advantage in the polls by 0.0017 percentage points on days two and three, by an additional 0.0021 points on day 5, and by another 0.0013 points on day six. While these individual coefficients are significant, they seem rather small, but this ignores the fact that the scale is often rather large and the effects are cumulative. As an example, a good day for Obama (one at the 75th percentile of coverage) has 12 more net positive stories than the previous day. That one good day would be expected to increase his advantage by about 0.11 points over the course of a week. A very good day, one at the 90th percentile would be expected to increase his advantage by about 0.23 points over the course of a week. In contrast, a single very bad day (at the 10th percentile) would be expected to reduce his advantage by about a quarter of a point (-0.25). The
effects on Romney’s support are a bit weaker: a very bad news day for Obama is only expected to boost Romney’s numbers by about 0.12 points. Given that Obama’s average advantage in the Pollster average is only 1.6 points, a shift of as much as 0.23 points from one day’s coverage is fairly dramatic.

The tests of the fully stationary data yield similar, though weaker, results. A unit increase in the number of positive statements about Obama on day zero leads to a slight decrease in his advantage (around 0.001) on days four, six and seven. Romney’s support is significantly impacted by statements about Romney, and Obama support is significantly impacted by statements about Obama. As before, the effects are relatively small individually, but are cumulative, leading to substantial effects when aggregated over the course of a week. What’s particularly interesting about the model making use of the fully differenced dependent variable is the direction of the coefficient. An increase in the number of positive stories about Obama leads to a decrease in the trajectory of the slope; it may be easier to remember that the stationary form of the variable is negatively correlated with the differenced form of the variable (r = -0.20 for Obama advantage; r = -0.12 for

Tab. 2: Results for Differenced Dependent Variables

<table>
<thead>
<tr>
<th>Lag</th>
<th>Coefficient Advantage Obama</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient Support Obama</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient Support Romney</th>
<th>Std Error</th>
<th>z</th>
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</thead>
<tbody>
<tr>
<td>Lag 1</td>
<td>0.0009</td>
<td>0.0006</td>
<td>1.51</td>
<td>0.0005</td>
<td>0.0003</td>
<td>1.35</td>
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<td>0.0003</td>
<td>-1.24</td>
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<tr>
<td>Lag 2</td>
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<td>0.0007</td>
<td>2.33</td>
<td>0.0009</td>
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<td>-1.84</td>
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<td>Lag 3</td>
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<td>1.90</td>
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<tr>
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<tr>
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<td>0.71</td>
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<td>-0.85</td>
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Differenced Romney Positivity

<table>
<thead>
<tr>
<th>Lag 1</th>
<th>Coefficient Advantage Romney</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient Support Romney</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient Support Romney</th>
<th>Std Error</th>
<th>z</th>
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</thead>
<tbody>
<tr>
<td>Lag 2</td>
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<td>0.0008</td>
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<td>0.0005</td>
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<td>Lag 3</td>
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<td>0.0009</td>
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<td>0.0010</td>
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<td>0.0020</td>
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<td>-0.45</td>
<td>0.0101</td>
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<td>1.80</td>
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<td>19.40</td>
<td>0.0724</td>
<td>0.0039</td>
<td>18.75</td>
<td>0.0720</td>
<td>0.0039</td>
<td>18.45</td>
</tr>
</tbody>
</table>

\[ r = -0.20 \text{ for Obama advantage; } r = -0.12 \text{ for Romney advantage.} \]
Obama support; \( r = -0.13 \) for Romney support), so the negative coefficients correspond to increases in support for the candidate. As in the previous set of models, increased positivity in coverage of Obama leads to higher support for Obama and greater Obama advantage in the polls. However, coverage of Obama does not seem to decrease support for Romney, nor does increased positive coverage of Romney seem to decrease Obama’s support or his advantage. Perhaps more importantly, these results resolve any question about the role of endogeneity in driving the previous set of results. As the dependent variables in these analyses are fully stationary, and give largely the same results, it can be confidently asserted that the results in the previous analyses were driven by the news coverage, not by any endogenous factors.

**Tab. 3: Results for (0,2,1) Dependent Variables**

<table>
<thead>
<tr>
<th>Lag</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4: Stationary Obama Advantage</td>
<td>5: Stationary Obama Support</td>
<td>6: Stationary Romney Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>Std Error</td>
<td>z</td>
<td>Coefficient</td>
<td>Std Error</td>
<td>z</td>
<td>Coefficient</td>
<td>Std Error</td>
<td>z</td>
</tr>
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<td></td>
<td>Differenced Romney Positivity</td>
<td>Differenced Romney Positivity</td>
<td>Differenced Romney Positivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Lag 4</td>
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<td>0.0005</td>
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<td>0.0001</td>
<td>0.0005</td>
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<td>0.0036</td>
<td>17.59</td>
<td>0.0608</td>
<td>0.0033</td>
<td>18.60</td>
</tr>
</tbody>
</table>

To test the third hypothesis, it is necessary to bifurcate the dataset, in order to compare the effects of media on candidate support during the first (Models 7 through 9: Table 4) and second half of the campaign (Models 10 through 12: Table 5). These periods correspond, respectively, to the periods from 11 April until 22 July and from 23 July through 28 October.
While there are some significant effects in the correct direction during the first half of the campaign (Table 4), they do seem much weaker than in the overall models. Increases in the net number of positive statements about Obama have a significant impact on his advantage and support at only one of the seven lags. The size of the effect on his advantage is actually relatively large compared to those found in the other models (around 0.003), but the fact that only one of the lags in each model is significant means that the effects aren’t strongly cumulative in the way they are in the overall models. While the effects during the first half of the campaign are in the expected direction (positivity about Obama leading his margin and his support to increase, and support for Romney to decrease), even the cumulative effects are vanishingly small.

The results for the second half of the campaign (Table 5) tell a very different story. Statements about Obama have a much smaller effect in the second half of the campaign than in the overall models, while changes in the positivity of Romney’s coverage have a much greater impact than in any of the other models. During the second half of the campaign, a good day for Romney in the news (at the 75th

<table>
<thead>
<tr>
<th>Lag</th>
<th>Coefficient Differenced Obama Positivity</th>
<th>Std Error</th>
<th>z</th>
<th>Coefficient Differenced Romney Positivity</th>
<th>Std Error</th>
<th>z</th>
</tr>
</thead>
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<tr>
<td>5</td>
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<td>6</td>
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<td>0.0012</td>
<td>1.58</td>
<td><strong>0.0014</strong></td>
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<td><strong>1.86</strong></td>
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<td>7</td>
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<td>0.05</td>
</tr>
<tr>
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<td>0.0014</td>
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<td>0.0021</td>
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<td>-0.23</td>
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<tr>
<td>Sigma</td>
<td>0.0107</td>
<td>0.0098</td>
<td>10.43</td>
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</tbody>
</table>

| Sigma    | 0.0563 | 0.0051 | 11.08 |
percentile, corresponding to 8 more net positive stories than the previous day) reduces Obama’s advantage by 0.16 points over the course of a week. A very good day for Romney in the news (at the 90th percentile, 15 more net positive) leads to a decrease in Obama’s lead of 0.31 points. That same very good day for Romney would also be expected to decrease Obama’s support by 0.16 points and increase Romney’s by 0.15 points. Given that changes in the net positive stories about Romney have almost no effect in the non-bifurcated models, these results are substantial. Interestingly, changes in the net positivity of Obama coverage have very limited effects during the second half of the campaign.

6. RESULTS

The results provide strong support for two of the hypotheses specified above and mixed support for the third. In the differenced models, statements about Romney and Obama in the media have significant effects on their own vote share and a significant effect on the opponent’s support. In the fully stationary model, support for these hypotheses is weaker. Statements about a candidate have a significant
impact on support for that candidate, but statements about the other candidate do not impact the degree of change in the slope of the other candidate’s support.

The story becomes rather more complicated in the third hypothesis. The third hypothesis is that media coverage should have a greater impact on support for the candidates during the second half of the campaign. During the overall campaign, there is a strong impact of statements about Obama and Romney on support for them. Looking at only at the first half of the campaign, though, there are very weak effects of statements about Obama on support for the candidates, and no impact of statements about Romney. In contrast, when just the second half of the campaign is analyzed, the weak effects of statements about Obama remain, but there are very strong effects of statements about Romney on support for both candidates. Bifurcating the dataset necessarily means reducing the sample size, therefore increasing the standard errors of the estimates. The fact that the effect of statements about Obama is present in both halves, and in the expected direction, but is much weaker suggests that the positivity of statements about Obama has a uniform impact throughout the campaign. However, the increased standard error of the estimates tends to swamp these effects when the results are bifurcated. In contrast, it seems that changes in the positivity of statements about Romney have an effect almost entirely in the second half of the campaign. When averaged with the very weak effects in the first half, there seem to be minimal effects in the overall campaign. The effects in the second half, however, are strong enough to overcome the increased standard error resulting from the bifurcation.

7. DISCUSSION

The results of our analysis provide strong support for Bartels’s explanation for the difference between observational results and experimental results. The effects of aggregate media coverage on relative support for the two candidates are large. It is possible that such effects could be observed on a weekly basis, but it would be difficult or impossible to establish causality without the sort of day-to-day tracking of public opinion that has only become the norm in the last few electoral cycles. Moreover, the fact that effects stem from the quantity of coverage, as well as from its positivity, means that any approach to evaluating media coverage that relies on a sampling of stories will fail to find any significant effects. Media coverage has an effect on support for the candidates, but one that is easily lost to measurement error.

Previous research (i.e., Shah et al. 2002; Edwards, Mitchell and Welsh 1995; Iyengar and Kinder 1987; Iyengar and Simon 1993; Iyengar, Peters and Kinder 1982) has shown that mass media can have significant effects through framing – so
why do these sorts of direct effects matter? First, these effects give us a way to forecast changes in a campaign in real time: knowing how media coverage is changing tells me something about how the polls will be moving over the next several days. An analysis focused just on framing effects would not be able to do the same: without knowing the latent preferences of the public on the issues being framed, it is impossible to know how the public will respond to a given frame. Second, it provides real world support for long-standing theories of political psychology. Well known models like Zaller’s RAS model (Zaller 1992; Feldman and Huddy 2012) or Lodge’s Online Processing Model (Lodge, McGraw and Stroh 1989; Lodge, Steenbergen and Brau 1995) predict that the presence of a greater volume of positive or negative messages in the media should, in the aggregate, lead to changes in public evaluations of a candidate. While these theories have been well tested and supported in the laboratory, there have been only limited attempts to test them outside of the lab: any support for them in a natural setting is worthwhile. Third, the results suggest that a model of the media reliant solely on priming and framing effects is understating the impact of the media. Priming and framing undoubtedly matter – and perhaps matter more than the effects that have been identified here – but the general positivity or negativity of the stories matters as well. It may well be agreed that the media has more than minimal effects, but the way in which these effects occur still matters.

This raises an important question: could these effects just be framing effects writ large? After all, it is possible that coverage of Obama or Romney is more positive solely because the media is focusing on issues on which the candidate is evaluated positively. However, this seems unlikely. First, media coverage during the campaign seems to be driven largely by events during the campaign. For instance, peaks in coverage correspond to the Presidential debates, the party conventions, the announcement of Romney’s vice-presidential nominee, and other non-policy related events. Simply put, one of the major criticisms of the modern American mass media coverage of Presidential campaigns is that it is too focused on the “horse race”: but in the horse race, there’s not much room for issue-framing. Second, even if these results were solely driven by selective coverage, the results show that it is not necessary to worry about the latent preferences of the public across issues: the positivity or negativity of the coverage is enough.

Another question arises from the results of the bifurcated analysis. These results suggest that coverage of Romney matters much more towards the end of the campaign than at the beginning, while coverage of Obama matters throughout the campaign. However, this cannot be taken to imply a general law that coverage of the challenger doesn’t matter early on. The 2012 election featured a well-known
and polarizing incumbent candidate: it is possible that in an election without a direct incumbent (as in 1976, 1988, 2000 or 2008), the effects of coverage would be more complex. There is also the question of why coverage matters more towards the end of the campaign. The general belief is that voters are paying more attention as the election approaches, but there is also more media coverage of the candidates as the election comes closer. As such, it isn’t clear if voters aren’t interested until the campaign is close to the end or if the media just isn’t covering it as much during its initial stages.

These results give us a very mixed view of the long-hypothesized minimal effects model of the media. Even media that required very little engagement – like television broadcasts – have a significant effect on the relative support for the two candidates in pre-election polls. Media coverage has a significant effect on vote choice, but one that is relatively small (and can only be picked up by large amounts of polling data) and fleeting (and can only be picked up by measures of media coverage and candidate support at the daily level). These findings also leave open the possibility that media coverage could have an impact on the outcome of a close election. While the effects of coverage are fairly small, a few days of very good, or very bad, coverage the week before the election could easily drive a candidate up or down in the polls enough to flip the outcome. If we’re asking whether the observational results or the lab results are right, the answer is: both. This finding has some implications for how researchers view media reporting of politics. If the media truly had only minimal effects, any failings of the media could be regarded as unimportant. If coverage doesn’t have any effect, because it’s only confirming existing attitudes or whatever the reason, the media have a proportionately reduced responsibility. If, however, as these findings suggest, media coverage is having a significant impact on the fortunes of candidates, there is a stronger case for the social responsibility model of the media (Siebert 1956; Ostini and Ostini 2002), in which regulators closely monitor media content and coverage in order to further the public good.

Finally, these results plot a course for the prediction of election results through the use of media data. Relatively few voters experience politics directly, by meeting a candidate or attending a speech; even the most popular televised events, like Presidential debates, are watched by a third of the electorate at most (see Prior 2012; Kenski and Jamieson 2011). As such, voters experience the campaign through the lens of the media. Media coverage, according to these results, is driving voters towards one candidate or the other, and through careful measurement of the content of the media, it is possible to predict how candidate support will shift as much as a week in advance.
REFERENCES


Halkos, G. & I. Kevork (2006). Forecasting an ARIMA (0,2,1) using the random walk model with drift. MPRA presentation paper.


