Entertainment and the Opportunity Cost of Civic Participation: Monday Night Football Game Quality Suppresses Turnout in US Elections

Matthew Potoski, University of California, Santa Barbara
R. Urbatsch, Iowa State University

Raising the opportunity cost of people's time may reduce their commitment to social obligations such as voting. Notably, entertaining sporting events can be strong civic distractions, as commentators throughout history have lamented. To consider sporting events' influence on political behavior, this paper examines the effect of Monday Night Football games the day before US general elections from 1970 to 2014. More attractive games, such as those that feature more prominent and competitive match-ups or that feature local or high-scoring teams, may entice people to consume more entertainment and thus have less time to devote to civic affairs. When preelection football game quality increases from its 25th to 75th percentile, voter turnout falls by between 2 and 8 percentage points. These effects are somewhat weaker among those more interested in politics and do not appear in placebo tests on other political behaviors occurring before the preelection game.

In laying out his classic theory on the calculus of voter turnout, Anthony Downs (1957, 265) noted that "time is the principal cost of voting." Empirical analyses have confirmed this logic, finding that more time-consuming voting processes lower turnout (e.g., Gibson et al. 2013). Such analyses have mostly focused on the number of minutes needed to vote, neglecting that those minutes' value varies depending on potential alternative, nonvoting uses of time. Yet as media institutions have evolved to offer more options (Prior 2007), entertainment options have at any point in time become more available and appealing. This raises voting's opportunity cost of time, which may decrease political participation, particularly among those who are not habitual voters—the very people whose inconsistency in voting most often causes turnout levels to vary.

The idea that entertainment seeking might come at the expense of political engagement is not new. The satirist Juvenal famously railed against ancient Rome's population for allowing circus games to distract from their civic duties: "The people don't give a damn any more. Once they bestowed legions, the symbols of power, all things, but now . . . there are only two things they ask for, bread and the games" (Juvenal 1958, 124). Similarly concerned that sport would divert citizens from their public-service obligations, rulers in medieval England enacted laws prohibiting "pointless amusements such as football" (Gunn 2010, 53).

This article examines whether popular entertainment can reduce the public's civic participation by focusing on a factor apt to draw a modern Juvenal's scorn: public attention to the National Football League's Monday Night Football (MNF) game the evening before United States' Election Day. MNF always matters to the American sports landscape, but some MNF games attract much larger audiences than do others. Even within the single 2012 season, for example, viewership ranged from 10.1 million (New York Jets vs. Tennessee Titans) to 16.6 million (Chicago Bears vs. Dallas Cowboys), suggesting that over 6 million people had 3.5 more hours of time—the duration of a typical game—consumed on Monday evening. A more compelling MNF game just before the election, then, may pull many people away from other tasks, which may then get shunted to Election Day at the expense of voting.

Matthew Potoski (mpotoski@bren.ucsb.edu) is a professor at the University of California, Santa Barbara, CA, 93106. R. Urbatsch (rurbat@iastate.edu) is an associate professor at Iowa State University, Ames, IA, 50011.

Data and supporting materials necessary to reproduce the numerical results in the paper are available in the *JOP* Dataverse (https://dataverse.harvard.edu/dataverse/jop). An online appendix with supplementary material is available at http://dx.doi.org/10.1086/688174.

The Journal of Politics, volume 79, number 2. Published online December 16, 2016. http://dx.doi.org/10.1086/688174
 0022-3816/2017/7902-0005$10.00

Analyses of National Election Studies (NES) and Current Population Surveys (CPS) data since 1970 produce the core empirical finding that more attractive MNF games lower next-day election turnout by several percentage points, effects large enough to be statistically and substantively important. Additional analyses look to buttress the central finding: one approach examines whether the effect of MNF game quality on turnout is stronger where theory suggests it should be, while a placebo approach tests whether our analyses spuriously detect an MNF influence on forms of civic participation that should be immune. We provide some evidence that MNF game quality effects appear to be weaker among those more interested in politics and stronger partisan identifiers. The placebo tests indicate that early registration and early voting do not show MNF effects, while the postelection game does not affect voting in inexplicable ways.

Our results have important implications for research on political participation. Typical changes in the attractiveness of the MNF game affect turnout comparably to changing a person's income by 10 percentiles. Moreover, entertainment may increasingly deter even more voters as the media evolves to offer ever more compelling viewing options to narrower groups. More generally, our paper shows how political participation can be influenced by the opportunity cost of time, which can vary substantially across individuals and circumstances.

THEORETICAL BACKGROUND

A rich literature has explored the cost-benefit calculus of turning out to vote. On the benefit side, being pivotal to electoral outcomes has typically proved less relevant than has pressure to conform to social norms (Gerber, Green, and Larimer 2008) or the pleasure of expressive behavior (Bendor, Diermeier, and Ting 2003; Hamlin and Jennings 2011; Makse and Sokhey 2014). The cost side is equally multifarious. Time spent registering, waiting in line, traveling to the polls (Gibson et al. 2013; Mukherjee 2009), and mustering the cognitive energy to formulate informed political opinions (García Bedolla and Michelson 2009) impose costs on voters (Brady, Verba, and Schlozman 1995; Gronke et al. 2008). Yet seemingly politically irrelevant factors can also influence the pleasantness of voting. More daylight (Rallings, Thrasher, and Borisyuk 2003), clement weather (Debbage et al. 2014; Hansford and Gomez 2010), and more convenient polling locations (Haspel and Knotts 2005) all affect turnout. These factors, too, make the time needed to get to the polls and vote more or less costly, thereby changing the relative appeal of doing other things instead; that is, they change the opportunity cost of voting.

Planners and politicians are aware that higher opportunity costs reduce voting. Recent "convenience voting" electoral reforms—early and absentee voting, extended poll hours—explicitly aim to increase turnout (Gronke et al. 2008). This connection assumes that people's allotments of discretionary time and what they choose to do with those allotments influence their propensities to participate in elections. People who are (or who anticipate being) busy on the regular election day may be likelier to vote if given more time or opportunity to do so. In practice, convenience reforms have only inconsistently appeared to increase turnout (Burden et al. 2014; Gronke et al. 2008, 444; Springer 2012), and large and increasing shares of the electorate report being too busy to vote on Election Day (Freeman 2004).

These voting-related results conform to broader findings in the time-use literature, where perceived available time strongly influences individuals' participation in optional activities ranging from housework (Coverman 1985) to charitable volunteering (Matsumoto 2014). Such studies regularly find that time constraints' effects spill across days; spending time on work or leisure activities on one day crowds the next several days' schedules (Nijland, Arentze, and Timmermans 2014; Tufte 2013, 108). That is, "intertemporal substitution" occurs: unexpected commitments cause people to rearrange their schedules (Connolly 2008). Even small changes can have persistent effects. Among the more studied time-use stimuli are transitions to and from Daylight Saving Time; that disposition of one hour of time can affect several days' behavior (Sexton and Beatty 2014).

Though infrequently discussed in the political science literature, this time-use literature implies that potential alternative uses of nonvoting time, including leisure time, may influence the propensity to get to the polls. When leisure becomes more valuable, as when entertainment options become more enticing, the opportunity cost of voting becomes higher, which could lower electoral participation. This entertainment-opportunity cost link relates both to secular trends in social and political behavior, as television viewing has grown to crowd out other leisure and civic activities in recent decades (Putnam 1995, 677–80), and to shorter-term effects, as variation in the appeal of available entertainment can greatly shift the availability of time.

Sporting events are a case in point. These can decisively influence how people use their time, affecting behaviors including job searches (Doerrenberg and Siegloch 2014), stock trades (Edmans, García, and Norli 2007), episodes of mental illness (Joiner, Hollar, and Van Orden 2006), and domestic violence (Card and Dahl 2011). Watching sporting events may increase testosterone levels (Bernhardt et al. 1998), suggesting a physiological underpinning to these behaviors. Such effects extend to political outcomes: football game results have been shown to affect people's evaluations of incumbent

politicians (Healy, Malhotra, and Mo 2010; Miller 2013; but see also Fowler and Montagnes 2015).

Since its start in 1970, MNF's popularity has made it a go-to example in social science studies concerning whether or how disruptions to circadian rhythm affect behavior (Smith, Guilleminault, and Efron 1997), the psychology of empathy (Ochsner et al. 2008), and racial identification in the media (Trujillo 1995). Critically, MNF games vary: more people generally pay attention to MNF when the week's participating teams have won more games, appear more evenly matched, and are expected to score more points (Paul and Weinbach 2007), and when local teams are playing (Tainsky, Xu, and Zhou 2014). These differences in expected game quality can shift the size of the MNF audience quite substantially, as with the differences in audience size in the 2012 season noted in the introduction.

Changes in MNF viewership before elections can have a substantial impact on how much time households have available for civic activities like voting. Time-use studies suggest typical scenarios illustrating how much a change in MNF viewership affects the US electorate's time available for voting, acknowledging that most households will diverge from these scenarios' details. We consider the 36-hour period from 8:00 a.m. on Monday preceding the election to 8:00 p.m., when many polls close, the next day. For a household with two voting-age adults, the total time available for the household is 72 hours. On average, that household allots 16 hours for sleeping (Basner et al. 2007, 1087–88) and 16 hours for work (Jacobs and Gerson 2001, 51). Another 10 hours go to essential household duties like commuting, meals, and personal and child care (Aguiar, Hurst, and Karabarbounis 2013). This leaves 22 hours of free time between the two adults. If one adult watches the MNF game, the household's remaining free time is reduced by about three and a half hours, or around 16% of the available free time, even without the game altering the other adult's schedule in any way. A single-adult household might use 8 hours for sleeping and 16 for working, as well as a total of 5 hours for commuting, meals, and personal care. Then, watching a three-and-a-half-hour MNF game consumes over half of the household's remaining six-and-a-half hours of free time.

In a Downsian cost-benefit calculus, several paths may lead the attractiveness of MNF to bid up the value of time and so the cost of voting in the next day's election. Most directly, watching MNF—or listening to the game on the radio or following it on the Internet—may push sleep and other activities into the next day, leaving less time available for voting. Time-budget studies have shown that consuming entertainment programming such as sports generally reduces the time available for civic activities (e.g., Hooghe 2002). Watching MNF may also have spillover consequences as other household members spend more time on chores and child care, picking up the slack when their cohabitant spends time watching the game. This leaves less time available for them, too, to complete civic obligations (Hamermesh 2002).

MNF may also deter some would-be voters through less direct paths. Some citizens are forgetful and easily distracted about politics (Wolak 2009) so that even simple impersonal reminders of ongoing elections can increase voter turnout (Dale and Strauss 2009). Discussing an important game, or consuming media about it, may conversely sidetrack some potential voters, who intended to go to the polls but instead got caught up in reading or having conversations about football. Indeed, for some, sports may fill some of the same identity and entertainment functions that paying attention to politics might. Both tend toward identification of and competition between in-groups and outgroups, thus potentially sating psychological needs and so substituting for one another (Schurtz et al. 2014). While our empirical analyses are unable to disentangle these mechanisms, our core contention is that changes in MNF game attractiveness can have both large direct impacts on a large number of potential voters and spillover consequences for those not watching the game. As a consequence, then, we would expect fewer people to vote following MNF football games with greater anticipated fan interest.

Recent work by Newman, Johnson, and Lown (2014) suggests that time effects are not simply a matter of counting hours. Models of political participation based on straightforward drawing-down of time resources neglect that some uses of time (such as commuting) may be more draining because of their wearing unpleasantness. One potential interpretation would position this as a counterargument to the logic presented here. More relaxing pastimes, by this logic, could recharge citizens' energies and make them more willing and able to vote. Spending time at a presumably enjoyable leisure activity could then have the effect of increasing turnout. However, the stress caused if the preferred team loses could counteract or overwhelm this effect (Kerr et al. 2005): particularly if sports fans are, like most people, loss averse, so that the disutility of a loss by the preferred (or betupon) team feels greater than the utility gained from a win, it is unclear how the stressful-time-use theory applies to the stimulus of Monday Night Football. An alternative generalization of Newman et al.'s (2014) theory could hold that any sustained strong emotion, whether frustration at an unpleasant commute or excitement at watching a football game, is exhausting. In this case, too, the presence of a more interesting, attractive football game would presumably emotionally roil more people and thereby more greatly diminish turnout.

That is, even if raw time use is matters less for political participation than does the emotional intensity of time expenditures, higher-quality games might be expected to have larger effects on political participation.

While turnout effects may be of concern for their own sake—for Juvenal, as for many modern pundits, civic participation is a measure of the polity's civic health—they can be particularly salient when they differ across subsets of the population (Gronke et al. 2008). MNF games may have different effects on the cost-benefit voting calculus for different types of voters, tracking varying interest in both politics and football. A football game may be less apt to deter from voting those with a passionate interest in politics or having stronger partisan identification.

To summarize the theory, more compelling entertainment events can reduce turnout by distracting citizens and raising the opportunity cost of turning out to vote. MNF is a potentially important example of this phenomenon, with variations in game attractiveness leading to higher or lower turnout for the follow day's elections. The key mechanism behind this is that viewing MNF games may reduce the time and attention necessary for voting, particularly for people less interested and engaged in politics.

DATA AND ANALYTIC APPROACH

We employ multiple data sets to test the proposed relationship between MNF game quality and electoral turnout. We first establish the empirical effect using two data sources generally covering 1970–2014, the period that Monday Night Football has existed: the CPS and the NES. Several researchers (e.g., Ghitza and Gelman 2013, 769; Hur and Achen 2013, 986) deem the CPS the "gold standard" of individual-level turnout data. CPS data are available for every federal (even-year) election from 1972 to 2014, while the NES covers biennial elections from 1970 to 2012, with the exceptions of 2006 and 2010.[1] We next report additional analyses that explore how MNF interacts with interest in politics, partisanship, and the time zone in which people live, to more finely assess the contexts in which football-induced time constraints may shape electoral behavior. Finally, we report three placebo tests, looking at variables for which MNF effects would not be expected, given voters who make decisions based on short-term time constraints: early voting, election registration, and postelection games.

In the first analyses, the dependent variable is self-reported voter turnout. For many (though not all) years, the surveys also contain information on absentee or early voting; since those who availed themselves of these options are likely to have cast their ballots before the MNF game, we exclude them from the main analyses. For the survey years when this information is unavailable, we include all voters. The inconsistent availability of information about early voting should impose a slight conservative bias on our estimates, because it will likely inflate the standard errors of estimates by imposing measurement error while biasing the coefficients toward zero by including respondents for whom MNF-quality effects are unlikely to arise.

We have two primary independent variables of interest measuring games' appeal to potential consumers,[2] as established in previous research examining games' ex ante interest[3] (Paul, Wachsman, and Weinbach 2012; Paul and Weinbach 2007, 2015; Tainsky et al. 2014). The first of these is the participating teams' records at the time of the game, measured as the proportion of games won, excluding ties. This captures the quality of playing teams and their odds of being in playoff contention, both of which are apt to increase enthusiasm for watching the game. People usually find more competitive games and those with many touchdowns more compelling. We therefore also consider the games' point-spread betting line (an estimate of how close or uncertain the game will be) and the over/under (an estimate of how high-scoring the game will be).[4]

1. An NFL players' strike canceled 1982's preelection game, so it is excluded from the models below. Including it in models at the value of the lowest-quality game observed in the sample (where fig. 1 displays it for illustrative purposes) increases the estimated effect of game quality—unsurprisingly, since 1982 had, for football-related reasons or otherwise, the second-highest turnout rate of any midterm election in our data.

2. We use game quality rather than television ratings for many reasons. Most fundamentally, secular changes in the media landscape and in ratings technology over our sample period make it very difficult to compare ratings numbers across years even when they purport to measure the same thing (e.g., Milavsky 1992). Other factors may also make MNF's ratings less than ideally accurate; for example, MNF games are disproportionately likely to be watched by viewers in nonresidential settings such as bars and dormitory common areas that are not included in traditional, home-based Nielsen ratings (Huff 1992). Monday Night Football has also, at various times, been widely consumed as a radio or online program that television ratings will ignore.

3. A game that is anticipated to be close or high scoring may turn out not to be: intragame characteristics may also matter. These are omitted from our reported measure of game quality, but including factors such as the score gap, and number of points scored, at halftime in the game-quality index does not substantially alter the results of the empirical analysis.

4. Data for point spread and over/under come from http://www.pro-football-reference.com/. For a few years, this is unavailable. In those cases, following Vergin and Scriabin (1978), spread information comes from the *New York Times* from the Friday before the relevant game; over/under estimates for the missing years are the average points scored in all previous games from the season involving either of the teams playing in the preelection Monday night game.

These three measures—team records, point spread, and over/under—are then standardized and added to form a single index of game quality, where higher values indicate a game more likely to attract public attention (i.e., point spread's sign is reversed). Substantively, one standard deviation of team records has the competing teams winning an additional 15% of their previous games, so that their combined record might move from 0.5, with as many wins as losses, to 0.65; a standard deviation of point spread is around 3.5 points; and a standard deviation of over/under is slightly under 6 points. Changing any of these variables by the respective amounts would thus change our game-quality index by one point. Such a multidimensional index is less subject to random noise than single-item measures would be (Ansolabehere, Rodden, and Snyder 2008).

Figure 1 displays a scatter plot of the game-quality index against national turnout, labeling each point with the last two digits of the corresponding election year. Turnout appears lower in years with higher-quality MNF games, for presidential elections (solid line) and midterms (dotted line) alike.[5] In either case, the estimated difference between years featuring the lowest-quality games and the highest-quality games is roughly four to five percentage points. This pattern persists in states holding odd-year gubernatorial elections (see online appendix): higher-quality MNF games associate with lower turnout in the next day's gubernatorial elections.

Our second measure of game interest is whether a local team is playing in the preelection game. Locals are more likely to be fans of the playing team and may in consequence be more likely to take in or talk about the game. Unfortunately, the CPS and some years of the NES do not contain very precise information about where respondents are located: they provide respondents' state, with some additional, inconsistent information about metropolitan areas or congressional districts. To be consistent across the data sets, we therefore treat anyone from the same census-defined metropolitan area as the playing teams to be "local." For the NES after 1998, when only congressional-district information is available, we include all residents of congressional districts where a majority of the population lives in the team's metropolitan area.[6] This means that the measure of "local" teams

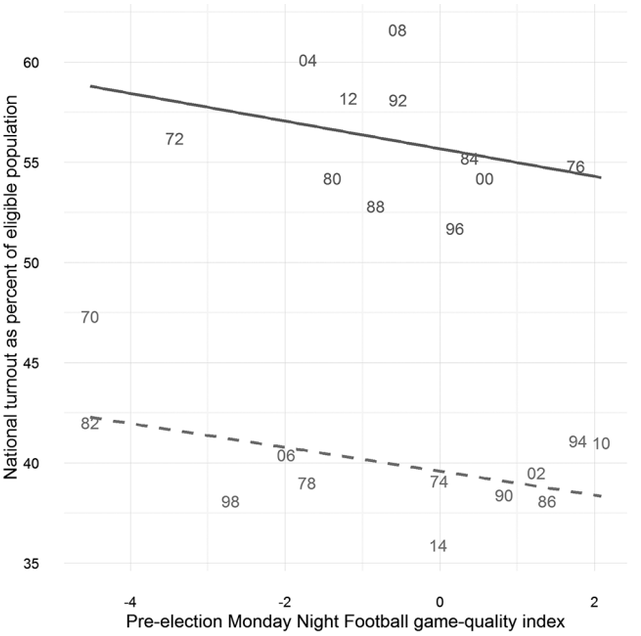

Figure 1. Turnout and preelection football-game quality. Solid line indicates trend of presidential elections; dashed line indicates midterm elections.

systematically differs across the two survey samples, which may produce some divergence in the model results.

The local-team measure has some drawbacks. It is noisy; definitions of metropolitan areas and congressional districts changed substantially over the years. Moreover, many football teams have fandoms in places extending well beyond their home metropolitan areas, and some metropolitan areas have two football teams that cannot both be the most-preferred team of all local football fans. For example, the Minneapolis metropolitan area leaves out most of Minnesota's Vikings territory, while many residents of the greater New York area may prefer the Jets to the Giants while still being counted as "local" for both teams. Also, people, especially those who have moved, may root for a team other than the local one. Indeed, evidence from Facebook fanship suggests that some teams' catch basin of fans is relatively national; the Dallas Cowboys are the most-liked team in many counties far removed from north Texas. Since political surveys do not generally ask about sports-team predilections, this sort of preference is invisible in our data.

The analyses include standard control variables suggested in the turnout literature. For the CPS, there is what Alvarez, Bailey, and Katz (2011, 28) and Burden et al. (2014,

5. The outlying 1970 observation is particularly influential in the slope of the midterm-election line. Excluding this point—which occurs naturally in our data, since the CPS data begin in 1972—produces smaller game-quality effects in off-year elections.

6. The effect of local games plausibly interacts with game quality: local audiences could be willing to watch a game even if it looks to be of low quality. Conversely, local fans could be particularly informed about and sensitive to whether a game is likely to be good and worth consuming. Perhaps because of these countervailing effects or the imprecision in our measure of local-team effects, we generally do not find any significant interactions along these lines; the effect of game quality seems similar regardless of whether or not the game involves a local team.

101) deem a "canonical model" of turnout. This includes as independent variables age and its square, education and its square, income, being nonwhite, and residing in the South.[7] To this, we add indicators of presidential, gubernatorial, and senatorial elections (since having different offices up for grabs likely influences enthusiasm for voting), and state-year random effects.[8] The analyses also control for the voter-registration closing date, coded as the number of days before the election: allowing registration nearer to the election may increase turnout. A final variable controls for the year of the election to account for secular trends. We replicated with the NES data the baseline CPS analysis using parallel control variables. Both surveys, especially the NES, also have a broad range of additional potential control variables; results reported below are robust to including a wide variety of these variables, including demographic characteristics (e.g., sex, marital status, length of residence at current address) and attitudes (e.g., self-reported interest in politics, frequency of church attendance, having a union member in the household). The online appendix reports descriptive statistics. We estimate equations of the following form:

$$Y_{it} = \alpha + \beta X_t + \lambda V_{ijt} + \theta \mathbf{Z}_{ijt} + \psi_{jt} + \varepsilon_{ijt}, \qquad (1)$$

where subscript i denotes CPS and NES individual respondents, j states of residence, and t denotes year. The term Y is the individual turnout status, taking a value of 1 if the respondent reports having voted; X is the index measuring game quality; and V is the indicator of a local team playing the preelection game, so that β and λ are the primary coefficients of interest, showing whether turnout is higher or lower following games of varying appealingness. The term $\mathbf{Z}$ is a matrix of control variables, including demographics and offices being contested, with θ its corresponding vector of coefficients. The state-year random effects, finally, are denoted as ψ.

Our analyses next use the NES and CPS survey data to explore whether this MNF football effect varies across people depending on their characteristics. We use the formula

$$Y_{it} = \alpha + \beta X_t + \lambda V_{ijt} + \theta \mathbf{Z}_{ijt} + \xi \mathbf{W}_{ijt} + \psi_{jt} + \varepsilon_{ijt}. \qquad (2)$$

Equation (2) follows equation (1) with the addition of vector of interaction terms ($\mathbf{W}$) along with their corresponding coefficients (ξ). One important potential interaction concerns likely interest in politics. Those deeply interested in and committed to political affairs may be less likely to allow a football game, however interesting, to distract them from voting and perceived civic obligations. This is measured directly in the NES by a question asking how interested people are in the elections; those who explicitly claim an interest in electoral politics are presumably likely to be less affected by characteristics of preelection football games. This measure may be subject to social-desirability bias and is unavailable for a few years of the NES surveys (1974, 2012, and half the sample in 2008). An alternative measure of political interest, sidestepping these drawbacks of the direct measure, is intensity of partisan identification. Partisan identifiers are more interested in politics than weak identifiers, partisan leaners, and independents (Wolfinger and Rosenstone 1980) and so could be less affected by MNF game quality. We measure intensity of partisanship as the distance from 4 on the standard 1 to 7 party-identification score: independents expressing no partisan leanings get a score of 0, partisan leaners get a score of 1, and so on up to strong party identifiers (with either major party) with a score of 3.

Another potential interaction involves the time at which the football game starts, which is contingent on the time zone in which a respondent lives. For someone living on the east coast, MNF starts late in the evening and extends into the night. For an Alaskan or Hawaiian, though, the game is really Monday Afternoon Football. This has potentially quite different implications for how the game disrupts schedules.

RESULTS

We present four groups of results, each with tables reporting the model coefficients and figures to facilitate interpretation. We begin with the main analyses evaluating the effects of MNF game quality and local team on turnout using equation (1) and the CPS and NES data. The next two groups of analyses evaluate additional hypotheses that should hold if MNF truly influences turnout. First are analyses using equation (2) that examine whether the MNF football effects differ across time zones and people's political engagement. The final analyses report placebo tests that examine whether our analytic approaches spuriously detect MNF effects in registration or early voting, two places where there is little reason to expect such effects to be observed, or when considering postelection MNF games.

Main effects of MNF game quality

Table 1 presents the results from the CPS and NES analyses, with models including both the full population of respondents and the subpopulation that reports being regis-

7. Results throughout are robust to omitting the education squared variable.

8. One of our independent variables of interest, game quality, is invariant within individual state-years, which precludes the use of fixed effects. In these circumstances, random effects serve as a substitute (Bell and Jones 2015; Clark and Linzer 2015).

Table 1. MNF Game Quality and Individual-Level Turnout, 1970–2014

	CPS Surveys		NES Surveys	
Independent Variables	Model 1	Model 2	Model 3	Model 4
Game quality	−.029**	−.029**	−.094**	−.209**
	(.006)	(.007)	(.025)	(.037)
Local team in game	−.015	−.038	−.254*	−.389*
	(.016)	(.022)	(.116)	(.160)
Age in years	.088**	.074**	.098**	.082**
	(.001)	(.001)	(.005)	(.007)
Age squared (× 100)	−.048**	−.044**	−.063**	−.054**
	(.001)	(.001)	(.005)	(.007)
Education category	.143**	.116**	.761**	.469**
	(.005)	(.006)	(.096)	(.146)
Education squared (× 100)	.941**	.603**	−1.719	.605
	(.029)	(.040)	(1.773)	(2.638)
Income percentile (× 100)	1.131**	.856**	1.167**	.896**
	(.008)	(.010)	(.060)	(.087)
Racial or ethnic minority	.126**	.126**	−.027	−.135*
	(.005)	(.007)	(.039)	(.054)
NFL metropolitan area	.007	.008	.040	.011
	(.005)	(.007)	(.042)	(.060)
Southerner	−.129**	−.259**	−.269**	−.351**
	(.022)	(.026)	(.075)	(.105)
Presidential election	.863**	1.211**	1.127**	.953**
	(.023)	(.028)	(.084)	(.119)
Gubernatorial election	.019	.078**	.030	−.044
	(.023)	(.027)	(.084)	(.118)
Senatorial election	.023	.062**	.040	.086
	(.021)	(.025)	(.074)	(.104)
Registration closing date	−.010**	−.002	−.014**	−.007
	(.001)	(.001)	(.004)	(.005)
Time trend	−.007**	−.016**	.014**	−.015**
	(.001)	(.001)	(.003)	(.004)
Constant	8.252**	28.832**	−33.074**	28.364
	(1.910)	(2.277)	(6.160)	(8.647)
Registered only?	No	Yes	No	Yes
N	1,482,521	1,129,442	31,903	25,567

Note. Logistic regression models with state-year random effects. Models 2 and 4 include only respondents who are registered to vote. Standard errors in parentheses. Table used for figure 2.

* Indicates two-tailed $p < .05$.

** Indicates two-tailed $p < .01$.

tered to vote; the latter is generally the group for whom time available on Election Day is most pivotal in determining ability to vote. For the table 1 analyses, and the others that follow, we use predicted probability figures (here, fig. 2) to illustrate results, since logistic coefficients can be difficult to interpret directly. Across all four models, the results indicate that higher-quality MNF games are associated with lower probabilities of voting at the following day's election; in each model the effects of game quality are highly statistically significant, and, as figure 2 shows, have nontrivial magnitudes. Moving from a game-quality index of −2 to one of +2, which are roughly the 25th and 75th percentiles of the variable's distribution, has the smallest estimated effect in model 2, where it reduces turnout by 2.1 percentage points (from 81.7% to 79.6%) keeping control variables at their observed values, as Hanmer and Kalkan (2013) recom-

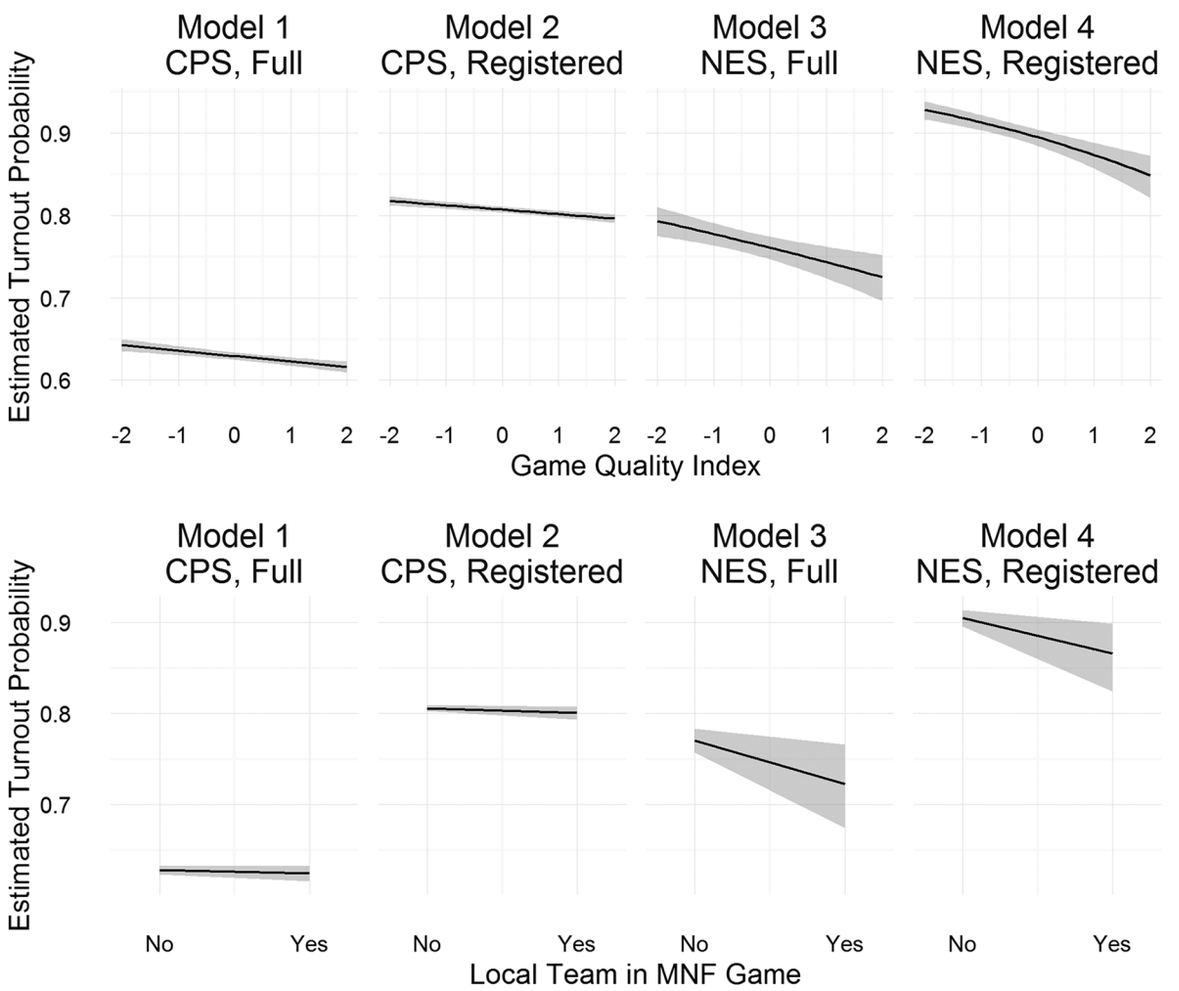

Figure 2. MNF game quality, local teams, and individual-level turnout, 1970–2014. "Full" indicates samples involving all respondents; "Registered" indicates those including only registered voters. Shaded areas indicate 95% confidence interval.

mend.[9] Conversely, the largest estimated effect is in model 4, where turnout falls by 8.0 percentage points (from 92.8% to 84.9%). To provide a sense of scale, a one to one-and-a-half percentage-point turnout reduction is roughly the same predicted effect on the probability of voting as would be seen between otherwise identical voters, one 10 income percentiles below the other. As might be expected, the analyses indicate higher voting levels among registered voters in both the CPS (col. 2) and the NES samples (col. 4) compared to respective full samples (cols. 1 and 3).

Having a local team involved in the game, by contrast, has less consistent effects in these main analyses. The local-team variable has point estimates indicating lower turnout in all four models, but this result is only statistically significant at standard levels in the two models with NES data. Figure 2 shows that, in the NES models, having a local team play on MNF reduces turnout from 77.0% to 72.8% among all respondents (model 3) and from 90.5% to 86.7% among registered voters (model 4).[10] While the results provide some evidence that local teams reduce turnout, they should be taken with a degree of caution: imprecise fandom measurement may be decreasing the difference in turnout between areas coded as "local" and those not so coded even as it increases the standard errors of estimates by introducing extra noise in the measurement.

9. As is often found in the turnout literature, our analyses find that respondents overreport turnout (McDonald 2003), probably due to social desirability (Holbrook and Krosnick 2010).

10. This distinction between CPS and NES results for local-team effects may reflect the difference in measurement of localness mentioned earlier, necessitated by the NES's sometimes providing its geographical information along congressional-district rather than county lines.

Results: Mediators of game-attractiveness effects on turnout

Examining whether the MNF effect varies across different groups of people provides a window on the plausibility of our central finding. Attractive MNF games may disrupt people's time values and allocation in different ways depending on how much they value participating in politics. Table 2 provides some evidence that this occurs, using NES survey data that have measures for interest in politics and partisanship for registered voters and all respondents. The analyses measure political engagement with interest in the election (models 1 and 2) and partisanship strength (cols. 3 and 4). Starting with the game quality interactions, political interest mitigates the effect of game quality on turnout among all voters (model 1). In other words, turnout among those more interested in politics is less influenced by MNF game quality than is turnout of those less interested in politics, as would be expected if the less-interested were more marginal voters, more easily distracted by other interests. The model 1 results summarized in figure 3 show that moving from a game-quality index of −2 to one of +2 reduces turnout by 3.4 percentage points among those least interested in politics. Among those most interested in politics, the analogous change in turnout is only 1.2 percentage points. However, interest in politics does not have a statistically discernible interaction with game quality when looking at just registered voters (model 2). When political engagement is measured via partisanship, the analyses show that partisanship strength does not have a statistically significant interaction with game quality among all voters (model 3) or registered voters (model 4), suggesting that stronger partisans are not appreciably more or less immune to MNF effects.

Turning to the local-team interactions, the results indicate that partisanship strength does significantly mitigate the effect of local team on turnout among all voters (model 3), but not in the registered-voter analysis (model 4). The model 3 results reported in figure 3 show that when a local team plays in the MNF game, weak partisans' turnout, though not very precisely estimated, declines from 60.8% to 45.1%, while turnout among strong partisans remains essentially unchanged, holding other variables constant at their observed values. However, political interest does not have a significant effect when interacted with local teams (models 1 and 2). Taken as a whole, the results provide at least some modest evidence that MNF

Table 2. MNF Game-Characteristic Effect by Political Engagement, 1970–2012

	NES Surveys			
Independent Variables	Model 1	Model 2	Model 3	Model 4
Game quality	−.063*	−.121*	−.093**	−.199**
	(.032)	(.049)	(.032)	(.048)
Game quality × Election interest	.029*	.000		
	(.015)	(.023)		
Game quality × Partisanship			−.002	−.007
			(.010)	(.017)
Local team	−.073	−.161	−.653**	−.758**
	(.256)	(.332)	(.193)	(.256)
Local team × Election interest	−.087	−.093		
	(.123)	(.160)		
Local team × Partisanship			.206*	.184
			(.086)	(.110)
Political interest	1.000**	.907**		
	(.025)	(.033)		
Partisanship			.452**	.301**
			(.016)	(.023)
Registered only?	No	Yes	No	Yes
N	24,974	18.692	31,686	24,307

Note. Logistic regression models with state-year random effects; control variables, omitted for brevity, follow table 1. Standard errors in parentheses.

* Indicates two-tailed $p < .05$.

** Indicates two-tailed $p < .01$.

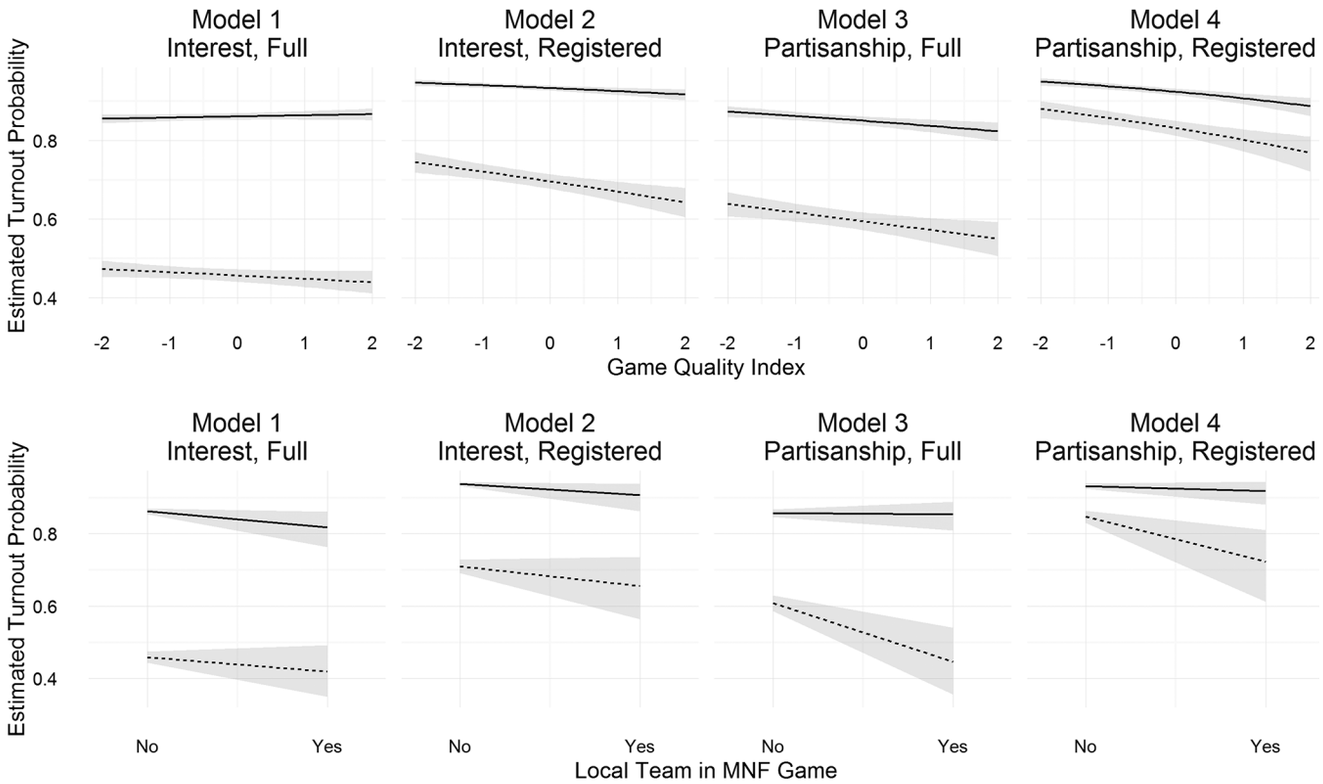

Figure 3. MNF game-characteristic effects by political engagement, 1970–2012. Solid line indicates maximum engagement with politics; dashed line, minimum engagement. "Full" indicates samples involving all respondents; "Registered" indicates those including only registered voters. Shaded areas indicate 95% confidence interval.

has weaker turnout reducing effects among those more engaged in politics, although these results are not consistent across both measures of political engagement (political interest and partisanship strength) and MNF football (game quality and local teams). As a further check, we conducted analyses investigating whether MNF reduces registration in states that allow election-day registration. These analyses use equation (2) and include an interaction between being in a state-year with Election Day registration and game quality (see online appendix for full results). The interaction term is significant in the CPS data (though not the NES data), indicating that in states with Election Day registration, postelection registration is lower when the MNF game is of higher quality.

MNF games start earlier in western time zones than eastern zones.[11] Theories suggest cross-cutting ways that time zone effects might refract MNF game quality's effect on turnout. Game quality may suppress turnout more with later start times because more people stay up late to watch the game, leaving them more tired the next day, or, if they choose to sleep in, with less time to vote. On the other hand, earlier start times occur at times of the evening when people are otherwise more typically occupied with life activities, as opposed to relaxing before bed, increasing the likelihood that deferred activities crowd out voting.

To investigate whether MNF game quality had different effects across time zones, we use equation (2) and the CPS and NES data, with respondents' time zone measured from zero (eastern) to 3 (Pacific) interacted with the game quality and local team measures. The results, reported in table 3, indicate that interaction between time zones and local team is statistically significant and positive in the CPS analyses (models 1 and 2), so that the effect of local teams on turn-

11. Time zones are not cleanly measured in our imprecise respondent-location information. For states mostly in one time zone (Michigan, Kansas, Oregon), we assign all residents to that main time zone. Where metropolitan-area data identify states' exceptional areas (Texas, Indiana), that information is used to assign respondents to a zone. The greatest difficulties arise in more evenly split states with few coded metropolitan areas (Kentucky, Tennessee); there, reported results include only those who live in metropolitan areas. Coding the nonmetropolitan respondents as being in their states' most populous time zones, or as being halfway between the two relevant time zones, produces very similar results.

Table 3. MNF Game-Quality Effect by Time Zone, 1970–2014

	CPS Surveys		NES Surveys	
Independent Variables	Model 1	Model 2	Model 3	Model 4
Game quality	−.013	−.010	−.039	−.168*
	(.010)	(.012)	(.052)	(.078)
Game quality × Time zone	−.008	−.010	−.031	−.023
	(.004)	(.005)	(.026)	(.038)
Local team	−.118**	−.110**	−.391	−.627*
	(.031)	(.041)	(.217)	(.304)
Local team × Time zone	.051**	.038*	.070	.122
	(.013)	(.018)	(.094)	(.135)
Time zone (eastern = minimum)	.010	.071**	−.015	−.022
	(.009)	(.011)	(.039)	(.055)
Registered only?	No	Yes	No	Yes
N	1,473,739	1,110,334	31,805	24,361

Note. Logistic regression models with state-year random effects; control variables, omitted for brevity, follow table 1. Standard errors in parentheses.

* Indicates two-tailed $p < .05$.

** Indicates two-tailed $p < .01$.

out is mitigated in more westerly time zones compared to eastern ones. The model 1 and 2 results reported in figure 4 show that in the eastern time zone, having a local team in the MNF game reduces turnout from 62.8% to 61.3%, holding other variables at their observed values. In the Pacific time zone, turnout is actually predicted to increase (though not statistically significantly) from 63.4% to 65.5% when a local team plays in the preelection game. The local-team–time-zone interaction is not significant in the NES analyses (cols. 3 and 4), perhaps because of the smaller sample size or the NES's congressional-district measure of locality. Finally, the game-quality index's effects do not differ across time zones, with none of the interaction term coefficients approaching standard levels of statistical significance.

On the whole, the effects of football-induced time constraints appear relatively consistent regardless of time zone. This suggests that the precise timing of interruptions to the personal schedule may be less important than the fact of the interruption. Whether the distracting event mostly implicates early evening hours when other errands might have been done or later at night during usual sleep periods, the effect on voting appears comparable.

Placebo tests

We conducted three placebo tests to see if our analyses reported MNF having effects on behavior similar to turnout when in fact there is little reason to expect such effects. Using the CPS data, we used equation (1) to investigate whether MNF game quality on the evening before the election influences either early/absentee voting or voter registration in states that do not allow it. We do not expect MNF to influence early and absentee voting since these can occur well before the game takes place, with enough time for people to adjust their schedules accordingly. Similarly, MNF should not influence registration in states where registration is required prior to Election Day.[12] Placebo analyses indicating that MNF game quality influenced either of these would suggest that our main findings on turnout were merely a statistical artifact. Instead, the placebo test indicate that MNF game quality and local team do not influence early/absentee voting and do not influence registration in states that do not allow same day registration. We finally include a test of the effect of the MNF game from the week after the election. This is not to be a clean placebo test when using the game quality score, as one week's MNF game quality is a strongly significant (negative) predictor of the next week's: since consecutive MNF games generally involve entirely different teams, when one week features two strong, high-scoring teams, the next week's game is likely to be drawing on a relatively de-

12. The results presented include a small proportion of observations with Election Day registration; the registration of those respondents could be affected by the preelection game. Excluding these respondents does not change the overall nonsignificance of the reported coefficients of interest.

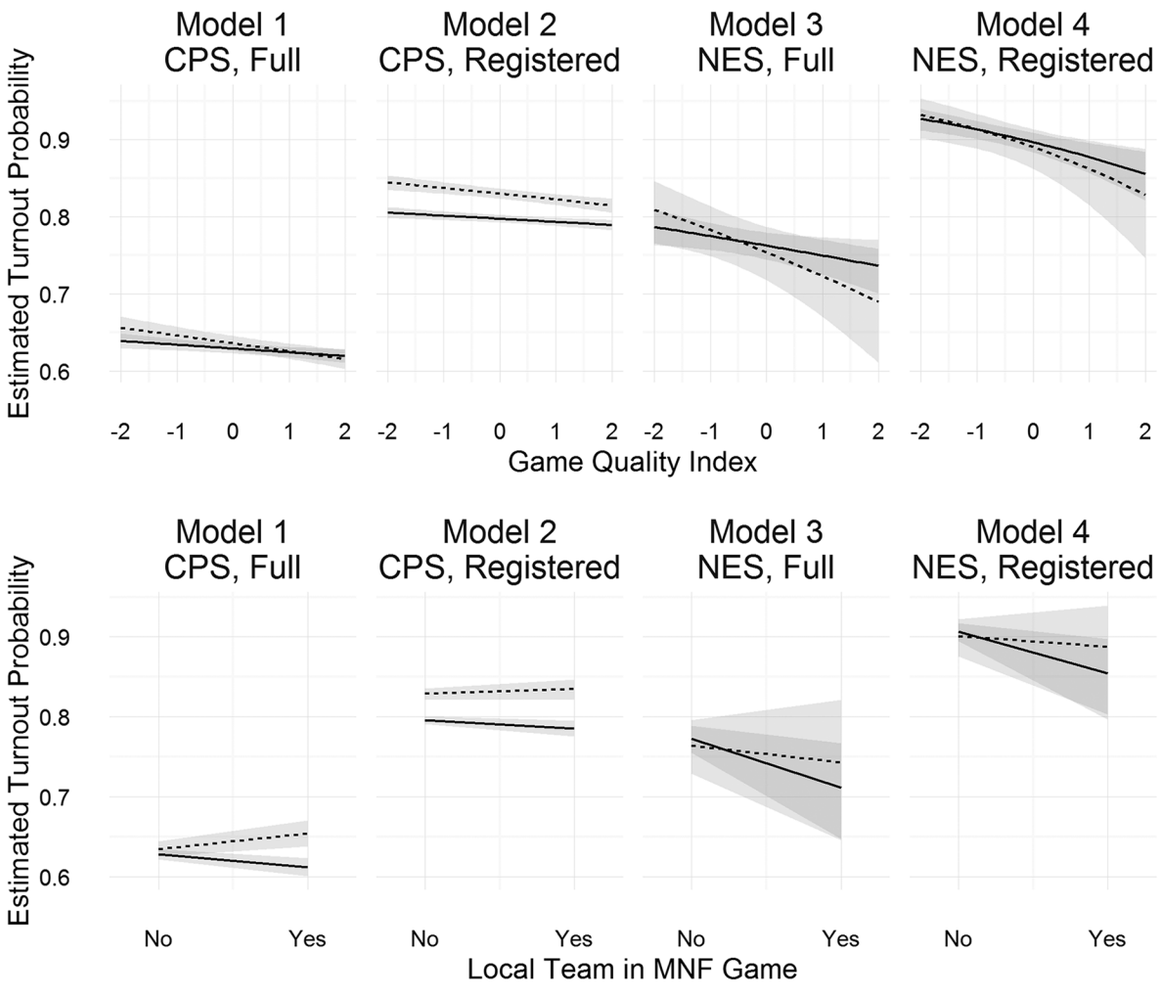

Figure 4. MNF game-characteristic effects by time zone, 1970–2014. Solid line indicates eastern time zone; dashed line, Pacific. "Full" indicates samples involving all respondents; "Registered" indicates those including only registered voters. Shaded areas indicate 95% confidence interval.

pleted, mediocre pool. However, the local-team score has much lower serial autocorrelation, in part because some metropolitan areas have multiple teams that do occasionally appear in consecutive games.

Table 4 presents the placebo test results. None of the coefficients for game quality and local team achieve statistical significance. In other words, our analyses fail to detect MNF effects in three places where such effects should not be detected, early voting and registration, providing some evidence that the MNF game quality and turnout result is not a mere statistical artifact.

CONCLUSION: MASS ENTERTAINMENT AND POLITICAL PARTICIPATION

Preelection MNF games appear to have predictable effects on turnout. Games featuring higher-quality teams, along with games that are thought more likely to be competitive or high scoring—all factors previous studies have found to make games more attractive and interesting to the public—tend to presage lower turnout at the next day's vote. Having a local team involved in the game also seems to have a turnout-dampening effect, though somewhat less consistently with the (imprecise) measures available for our analyses. Moreover, the results suggest that these turnout-diminishing effects are not randomly spread across individuals: there is some, albeit weak, evidence that they concentrated in weaker partisans and those less interested in politics. They do, however, seem to be relatively stable across time zones, so that the effect appears to reflect general differences in time availability rather than the decisiveness of any one particular block of time. Placebo tests suggest that these results do not stem from some chance relationship between game characteristics and broader political engagement.

Our findings have implications for several fields of political study. Most immediately, they speak to several important areas regarding turnout and electoral participation. Citizens' susceptibility to last-minute distraction may partly explain their poor forecasts concerning whether or not they

Table 4. Placebo Tests of MNF Game Effects on Political Behavior, 1970–2014

	Early Voting		Registration		Postelection	
Independent Variables	CPS	NES	CPS	NES	CPS	NES
Game quality	.019	−.024	−.015	−.029		
	(.020)	(.090)	(.008)	(.025)		
Local team	−.049	−.541	.013	−.049		
	(.039)	(.339)	(.018)	(.133)		
Postelection local team					.015	.105
					(.017)	(.178)
N	1,232,213	9,524	1,498,812	21,747	1,500,838	24,562

Note. Logistic regression models with state-year random effects; control variables, omitted for brevity, follow table 1. Standard errors in parentheses.

* Indicates two-tailed $p < .05$.

will vote (Rogers and Aida 2014).[13] Although MNF interest varies in predictable ways that make it particularly amenable to analysis, it is not the only potential such distraction: other television programs or cultural events could potentially have similar effects, both in the United States and in countries where American football is utterly irrelevant. More broadly, the results reported in this paper also open a window on the consumption value of time spent on activities other than political participation, and how these sorts of effects can, even when caused by factors as remote from standard "politics" as football or entertainment programming, shape outcomes of political interest. Such influences can arise as happenstance when people make decisions without consideration of political implications, as seems to be the case with Monday Night Football. Policy makers may manipulate sporting events for political end, as with Juvenal's concern that Roman elites boosted their popularity by satiating the masses' appetites for competitive spectacle. As a modern example, multiple Latin American governments have attempted to have soccer matches coincide with policy debates so that the former would pull attention away from the latter (Bowman 2015). Conversely, a 2010 soccer match between rivals FC Barcelona and Real Madrid was rescheduled to avoid interfering with Catalonian elections (Correas 2010).

As the media fragments into multiple small-niche services and easy access to ubiquitous social networks expose citizens to many additional events and activities, these sorts of potential distractions promise to proliferate still further in the future. Activities may also be more or less emotionally draining, with consequences for the next day's activities, and the same activity may have different effects on groups of people: a casual football fan may respond differently to an exciting MNF game than an avid fan whose team just lost (consistent with Healy et al. 2010). Thinking about the future of political participation may require taking seriously the amount of time that individuals are willing and able to devote to politics as the opportunity cost of spending time engaging with politics increases.

13. Devoting time to an MNF game could make people less willing to respond to pollsters around high-quality games, which could also influence polls' turnout-forecast accuracy.

ACKNOWLEDGMENTS

We thank Jennifer Merolla, Don Moynihan, and the anonymous reviewers for their feedback.

REFERENCES

Aguiar, Mark, Erik Hurst, and Loukas Karabarbounis. 2013. "Time Use during the Great Recession." *American Economic Review* 103 (5): 1664–96.

Alvarez, R. Michael, Delia Bailey, and Jonathan N. Katz. 2011. "An Empirical Bayes Approach to Estimating Ordinal Treatment Effects." *Political Analysis* 19 (1): 20–31.

Ansolabehere, Stephen, Jonathan Rodden, and James M. Snyder. 2008. "The Strength of Issues: Using Multiple Measures to Gauge Preference Stability, Ideological Constraint, and Issue Voting." *American Political Science Review* 102 (2): 215–32.

Basner, Mathias, Kenneth M. Fomberstein, Farid M. Razavi, Siobhan Banks, Jeffrey H. William, Roger R. Rosa, and David F. Dinges. 2007. "American Time Use Survey: Sleep Time and Its Relationship to Waking Activities." *Sleep* 30 (9): 1085–95.

Bell, Andrew, and Kelvyn Jones. 2015. "Explaining Fixed Effects: Random Effects Modeling of Time-Series Cross-Sectional and Panel Data." *Political Science Research and Methods* 3 (1): 133–53.

Bendor, Jonathan, Daniel Diermeier, and Michael Ting. 2003. "A Behavioral Model of Turnout." *American Political Science Review* 97 (2): 261–80.

Bernhardt, Paul C., James M. Dabbs Jr., Julie A. Fielden, and Candice D. Lutter. 1998. "Testosterone Changes during Vicarious Experiences of Win-

ning and Losing among Fans at Sporting Events." *Physiology and Behavior* 65 (1): 59–62.

Bowman, Kirk. 2015. "Futebol/Fútbol, Identity, and Politics in Latin America." *Latin American Research Review* 50 (3): 254–64.

Brady, Henry E., Sidney Verba, and Kay Lehman Schlozman. 1995. "Beyond SES: A Resource Model of Political Participation." *American Political Science Review* 89 (2): 271–94.

Burden, Barry C., David T. Canon, Kenneth R. Mayer, and Donald P. Moynihan. 2014. "Election Laws, Mobilization, and Turnout: The Unanticipated Consequences of Election Reform." *American Journal of Political Science* 58 (1): 95–109.

Card, David, and Gordon B. Dahl. 2011. "Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior." *Quarterly Journal of Economics* 126 (1): 103–43.

Clark, Tom S., and Drew A. Linzer. 2015. "Should I Use Fixed or Random Effects?" *Political Science Research and Methods* 3 (2): 399–408.

Connolly, Marie. 2008. "Here Comes the Rain Again: Weather and the Intertemporal Substitution of Leisure." *Journal of Labor Economics* 26 (1): 73–100.

Correas, Ferran. 2010. "El clàssic es jugarà dilluns." *El Punt Avui*. http://www.elpuntavui.cat/article/8-esports/48-barca/329919-el-classic-es-jugara-dilluns.html (accessed June 2, 2016).

Coverman, Shelley. 1985. "Explaining Husbands' Participation in Domestic Labor." *Sociological Quarterly* 26 (1): 81–97.

Dale, Allison, and Aaron Strauss. 2009. "Don't Forget to Vote: Text Message Reminders as a Mobilization Tool." *American Journal of Political Science* 53 (4): 787–804.

Debbage, Neil, Nick Gonsalves, J. Marshall Shepherd, and John A. Knox. 2014. "Superstorm Sandy and Voter Vulnerability in the 2012 U.S. Presidential Election: A Case Study of New Jersey and Connecticut." *Environmental Hazards—Human and Policy Dimensions* 13 (3): 181–99.

Doerrenberg, Philipp, and Sebastian Siegloch. 2014. "Is Soccer Good for You? The Motivational Impact of Big Sporting Events on the Unemployed." *Economics Letters* 123 (1): 66–69.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper.

Edmans, Alex, Diego García, and Øyvind Norli. 2007. "Sports Sentiment and Stock Returns." *Journal of Finance* 62 (4): 1967–98.

Fowler, Anthony, and B. Pablo Montagnes. 2015. "College Football, Elections, and False-Positive Results in Observational Research." *Proceedings of the National Academy of Sciences* 112 (45): 13800–13804.

Freeman, Richard B. 2004. "What, Me Vote?" In Kathryn M. Neckerman, ed., *Social Inequality*. New York: Russell Sage.

García Bedolla, Lisa, and Melissa R. Michelson. 2009. "What Do Voters Need to Know? Testing the Role of Cognitive Information in Asian American Voter Mobilization." *American Politics Research* 37 (2): 254–74.

Gerber, Alan S., Donald P. Green, and Christopher W. Larimer. 2008. "Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment." *American Political Science Review* 102 (1): 33–48.

Ghitza, Yair, and Andrew Gelman. 2013. "Deep Interactions with MRP: Election Turnout and Voting Patterns among Small Electoral Subgroups." *American Journal of Political Science* 57 (3): 762–76.

Gibson, John, Bonggeun Kim, Steven Stillman, and Geua Boe-Gibson. 2013. "Time to Vote?" *Public Choice* 156 (3–4): 517–36.

Gronke, Paul, Eva Galanes-Rosenbaum, Peter A. Miller, and Daniel Toffey. 2008. "Convenience Voting." *Annual Review of Political Science* 11:437–55.

Gunn, Steven. 2010. "Archery Practice in Early Tudor England." *Past and Present* 209, 53–81.

Hamermesh, Daniel S. 2002. "Timing, Togetherness and Time Windfalls." *Journal of Population Economics* 15 (4): 601–23.

Hamlin, Alan, and Colin Jennings. 2011. "Expressive Political Behavior: Foundations, Scope and Implications." *British Journal of Political Science* 41 (3): 645–70.

Hanmer, Michael J., and Kerem Ozan Kalkan. 2013. "Behind the Curve: Clarifying the Best Approach to Calculating Predicted Probabilities and Marginal Effects from Limited Dependent Variable Models." *American Journal of Political Science* 57 (1): 263–77.

Hansford, Thomas G., and Brad T. Gomez. 2010. "Estimating the Electoral Effects of Voter Turnout." *American Political Science Review* 104 (2): 268–88.

Haspel, Moshe, and H. Gibbs Knotts. 2005. "Location, Location, Location: Precinct Placement and the Costs of Voting." *Journal of Politics* 67 (2): 560–73.

Healy, Andrew J., Neil Malhotra, and Cecilia Hyunjung Mo. 2010. "Irrelevant Events Affect Voters' Evaluations of Government Performance." *Proceedings of the National Academy of Sciences* 107 (29): 12804–809.

Holbrook, Allyson L., and Jon A. Krosnick. 2010. "Social Desirability Bias in Voter Turnout Reports Tests Using the Item Count Technique." *Public Opinion Quarterly* 74 (1): 37–67.

Hooghe, Marc. 2002. "Watching Television and Civic Engagement: Disentangling the Effects of Time, Programs, and Stations." *Harvard International Journal of Press/Politics* 7 (2): 84–104.

Huff, Richard. 1992. "Taking Outside Look at 'MNF.'" *Daily Variety*, April 28, 3.

Hur, Aram, and Christopher H. Achen. 2013. "Coding Voter Turnout Responses in the Current Population Survey." *Public Opinion Quarterly* 77 (4): 985–93.

Jacobs, Jerry A., and Kathleen Gerson. 2001. "Overworked Individuals or Overworked Families? Explaining Trends in Work, Leisure, and Family Time." *Work and Occupations* 28 (1): 40–63.

Joiner, Thomas E., Jr., Daniel Hollar, and Kimberly Van Orden. 2006. "On Buckeyes, Gators, Super Bowl Sunday, and the Miracle on Ice: 'Pulling Together' Is Associated with Lower Suicide Rates." *Journal of Social and Clinical Psychology* 25 (2): 179–95.

Juvenal. 1958. *The Satires of Juvenal*, trans. Rolfe Humphries. Bloomington: Indiana University Press.

Kerr, John H., George V. Wilson, Isamu Nakamura, and Yoshiko Sudo. 2005. "Emotional Dynamics of Soccer Fans at Winning and Losing Games." *Personality and Individual Differences* 38 (8): 1855–66.

Makse, Todd, and Anand E. Sokhey. 2014. "The Displaying of Yard Signs as a Form of Political Participation." *Political Behavior* 36 (1): 189–213.

Matsumoto, Shigeru. 2014. "The Opportunity Cost of Pro-environmental Activities: Spending Time to Promote the Environment." *Journal of Family and Economic Issues* 35 (1): 119–30.

McDonald, Michael P. 2003. "On the Overreport Bias of the National Election Study Turnout Rate." *Political Analysis* 11 (2): 180–86.

Milavsky, J. Ronald. 1992. "How Good Is the A. C. Nielsen People-Meter System? A Review of the Report by the Committee on Nationwide Television Audience Measurement." *Public Opinion Quarterly* 56 (1): 102–15.

Miller, Michael K. 2013. "For the Win! The Effect of Professional Sports Records on Mayoral Elections." *Social Science Quarterly* 94 (1): 59–78.

Mukherjee, Elora. 2009. "Abolishing the Time Tax on Voting." *Notre Dame Law Review* 85 (1): 177–246.

Newman, Benjamin J., Joshua Johnson, and Patrick L. Lown. 2014. "The 'Daily Grind': Work, Commuting, and Their Impact on Political Participation." *American Politics Research* 42 (1): 141–70.

Nijland, Linda, Theo Arentze, and Harry Timmermans. 2014. "Multi-day Activity Scheduling Reactions to Planned Activities and Future Events in a Dynamic Model of Activity-Travel Behavior." *Journal of Geographical Systems* 16 (1): 71–87.

Ochsner, Kevin N., Jamil Zaki, Josh Hanelin, David H. Ludlow, Kyle Knierim, Tara Ramachandran, Gary H. Glover, and Sean C. Mackey. 2008. "Your Pain or Mine? Common and Distinct Neural Systems Supporting the Perception of Pain in Self and Other." *Social Cognitive and Affective Neuroscience* 3 (2): 144–60.

Paul, Rodney J., Yoav Wachsman, and Andrew Weinbach. 2012. "Measuring and Forecasting Fan Interest in NFL Football Games." *Journal of Gambling Business and Economics* 6 (3): 34–46.

Paul, Rodney J., and Andrew P. Weinbach. 2007. "The Uncertainty of Outcome and Scoring Effects on Nielsen Ratings for Monday Night Football." *Journal of Economics and Business* 59 (3): 199–211.

Paul, Rodney J., and Andrew P. Weinbach. 2015. "The Betting Market as a Forecast of Television Ratings for Primetime NFL Football." *International Journal of Sport Finance* 10 (3): 284–96.

Prior, Markus. 2007. *Post-broadcast Democracy: How Media Choice Increases Inequality in Political Involvement and Polarizes Elections*. New York: Cambridge University Press.

Putnam, Robert D. 1995. "Tuning In, Tuning Out: The Strange Disappearance of Social Capital in America." *PS: Political Science and Politics* 28 (4): 664–83.

Rallings, C., M. Thrasher, and G. Borisyuk. 2003. "Seasonal Factors, Voter Fatigue and the Costs of Voting." *Electoral Studies* 22 (1): 65–79.

Rogers, Todd, and Masahiko Aida. 2014. "Vote Self-Prediction Hardly Predicts Who Will Vote, and Is (Misleadingly) Unbiased." *American Politics Research* 42 (3): 503–28.

Schurtz, D. Ryan, David Combs, Charles Hoogland, and Richard H. Smith. 2014. "Schadenfreude in Sports and Politics: A Social Identity Perspective." In Wilco W. van Dijk and Jaap W. Ouwerkerk, eds., *Schadenfreude: Understanding Pleasure at the Misfortune of Others*. New York: Cambridge University Press, 170–85.

Sexton, Alison L., and Timothy K. M. Beatty. 2014. "Behavioral Responses to Daylight Savings Time." *Journal of Economic Behavior and Organization* 107 (A): 290–307.

Smith, Roger S., Christian Guilleminault, and Bradley Efron. 1997. "Sports, Sleep, and Circadian Rhythms: Circadian Rhythms and Enhanced Athletic Performance in the National Football League." *Sleep* 20 (5): 362–65.

Springer, Melanie J. 2012. "State Electoral Institutions and Voter Turnout in Presidential Elections, 1920–2000." *State Politics and Policy Quarterly* 12 (3): 252–83.

Tainsky, Scott, Jie Xu, and Yilun Zhou. 2014. "Qualifying the Game Uncertainty Effect: A Game-Level Analysis of NFL Postseason Broadcast Ratings." *Journal of Sports Economics* 15 (3): 219–36.

Trujillo, Nick. 1995. "Machines, Missiles, and Men: Images of the Male Body on ABC's Monday Night Football." *Sociology of Sport Journal* 12 (4): 403–23.

Tufte, Pernille. 2013. "Is There Time Enough? Temporal Resources and Service Performance in the Danish Home Care Sector." *Nordic Journal of Working Life Studies* 3 (2): 97–112.

Vergin, Roger C., and Michael Scriabin. 1978. "Winning Strategies for Wagering on National Football League Games." *Management Science* 24 (8): 809–18.

Wolak, Jennifer. 2009. "The Consequences of Concurrent Campaigns for Citizen Knowledge of Congressional Candidates." *Political Behavior* 31 (2): 211–29.

Wolfinger, Raymond E., and Steven J. Rosenstone. 1980. *Who Votes?* New Haven, CT: Yale University Press.