

Moving Pictures? Experimental Evidence of Cinematic Influence on Political Attitudes*

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Objectives. Media effects research has generally ignored the possibility that popular films can affect political attitudes. This omission is puzzling for two reasons. First, research on public opinion finds the potential for persuasion is highest when respondents are unaware that political messages are being communicated. Second, multiple studies have found that entertainment media can alter public opinion. Together, this suggests that popular films containing political messages should possess the potential to influence attitudes. *Methods.* We develop a laboratory experiment where subjects were randomly assigned to watch a control movie with no political messages, a movie with subtle political messages, or a movie with strong and explicit political messages. *Results.* We find that popular movies possess the ability to change political attitudes, especially on issues that are unframed by the media. Furthermore, we show such influence persists over time and is not moderated by partisanship, ideology, or political knowledge. *Conclusions.* Our key findings suggest that a renewed scholarly interest in the political influence of popular movies is clearly warranted.

While an understanding of the media's influence on politics has matured in recent years, popular movies have been largely eschewed in modern media research, apparently suffering from the lasting stigma of the early "minimal effects" models (Lazarsfeld, Berelson, and Gaudet, 1948) and a long-held view that media characterized as *entertainment* has little impact on politics (Delli Carpini and Williams, 1994). With the bulk of scholarly attention focused on other media types, such as newspapers (Mutz, 2001), the nightly news (Iyengar and Kinder, 1987), and campaign advertising (Lau et al., 1999),

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the literature has little to say about whether popular movies may or may not influence American political life.

The lack of attention given to popular cinema is puzzling given recent advances in our understanding of public opinion. Despite initial findings of response instability, which led to concerns about the validity of issue attitudes (Converse, 1964), recent research has established that aggregate public opinion moves in predictable ways in response to new information (Page and Shapiro, 1992; Erikson, MacKuen, and Stimson, 2002). Variation is to some extent explainable, with currently held “top of the head” considerations influencing individual attitudes at a given point of time (Zaller, 1992). Thus, attitude change results from changes in the relative salience or availability of information on a particular issue. Furthermore, when receiving messages, citizens are only likely to reject political messages to the extent they recognize that such messages conflict with their existing attitudes (Lazarsfeld, Berelson, and Gaudet, 1948; Zaller, 1992). Given these findings, we would expect popular movies to possess the potential to affect attitudes because viewers are less likely to recognize the political nature of the messages they are receiving, thereby reducing their capacity for resistance.

The present study tests this theory by assessing whether cinematic influence is possible in the case of attitudes on policies subject to recent, national, and highly partisan debate—in this case, the struggle over health-care reform that began in 2009. Specifically, we use a randomized three-wave panel lab experiment to show that subjects who viewed popular films containing pro-health-care reform messages became significantly more liberal on health-care policy attitudes. Furthermore, we show such attitudinal change persisted two weeks after exposure. Finally, as predicted by our theory, the influence we uncover appears largely immune to common moderators of effects, such as partisanship, ideology, and political sophistication.

Media Studies and Public Opinion

The potential of feature-length popular movies to influence individual attitudes and behaviors was of much scholarly interest in the early half of the 20th century (Gitlin, 1978; Staiger, 2005). This focus was driven by the meteoric rise of movie popularity together with growing fears of the negative influence of movies on American culture generally and political extremism more specifically (Staiger, 2005). By the 1950s, however, scholarly attention began to shift from the cinema to television due to its ability to influence large audiences with mediated political messages on a recurrent basis (Gitlin, 1978; Staiger, 2005; Jamieson, 1992). While a survey of recent political science research finds evidence of media effects from exposure to various entertainment vehicles, including television news (Iyengar and Kinder, 1987), “soft” news programs (Baum, 2002), and prime-time television (e.g., Holbrook and Hill, 2005), research continues to suggest that pure entertainment sources,

including popular movies, have little potential to affect political attitudes (Delli Carpini and Williams, 1994).

The limited political research on film effects in recent years has largely focused on films about politics, political institutions, or political actors. Zimbardo and his associates (Butler, Koopman, and Zimbardo, 1995) showed that exposure to the movie *JFK* (1991) resulted in substantial reductions in intentions to vote and donate money to a political campaign. Davis and Davenport (1997) found that viewing *Malcolm X* (1992) influenced racial consciousness as an attitudinal measure, the importance of race relations as a salience measure, and knowledge of Malcolm X and his role in the civil rights movement as a cognitive measure. A study of *All the Presidents Men* (1976) showed clear attitudinal change regarding the role of the press in acting as a watchdog on government activity (Elliott and Schenk-Hamlin, 1979). In fact, of all the modern film studies we are aware of, only one failed to find at least some of the expected effects (Sigelman and Sigelman, 1974).

The pattern of significant findings for explicitly political films¹ makes it all the more surprising that political scientists have so rarely considered the possibility that popular films intended for entertainment could affect political attitudes. In the only exception to our knowledge, Mulligan and Habel (2011) showed that viewing *The Cider House Rules* (1999) had a clear pro-choice effect on abortion attitudes. Given the popularity of and critical acclaim for popular films that are packed with political content and messages—like the blockbusters *Avatar* (2009) and *The Dark Knight Rises* (2012)—more research in this area is clearly needed.

A Theory of Attitudinal Influence of Popular Films

Public opinion theory suggests that popular films should have the potential to affect attitudes. Zaller's "memory based" approach finds that respondents answer survey questions from a distribution of held beliefs, with response instability largely a function of which attitudes are sampled at the time the survey is taken (Zaller, 1992). Therefore, attitude change results from changes in either the relative salience or balance of considerations on a given issue, with resistance to influence becoming more acute where an individual recognizes that such messages conflict with his or her existing beliefs (Zaller, 1992; Campbell et al., 1960).

In light of these findings, the popular nature of films may actually *increase* the likelihood of observing effects because viewers tend to perceive movies as entertainment and therefore lower their political guards during exposure (Chong

¹We acknowledge the line between "political" and popular films is not clear, as politically-oriented films can indeed be popular. The critical point is not that popular movies do not have political *content* that makes them potentially persuasive, but that such content is presented within contexts that are less politically charged than the political docudramas more usually the focus of research.

and Druckman, 2007a). Furthermore, since the importance of party affiliation, ideology, and political sophistication as conditioning factors depends on a respondent's ability to recognize messages as political in nature (Zaller, 1992; Chong and Druckman, 2007a, 2007b), we expect these three moderators will have relatively little effect on any attitudinal change precisely because political content within popular movies is presented in apolitical contexts.

Another reason we might expect effects is that movies present a relatively one-sided view of a given issue or controversy and for an extended period of time. Various studies that fail to find media effects contain competing messages that cancel each other out, leading to no net attitude change (Bartels, 1993; Zaller, 1996; Chong and Druckman, 2007a). Popular films, on the other hand, expose viewers to uniform messages for an extended time, all the while providing persuasive content in an "entertaining" and apolitical way.

Research also suggests that any attitudinal change may depend on the exact issue respondents are asked about. It is well established that the majority of citizens are fairly uninformed about most political matters (Campbell et al., 1960; Delli Carpini and Keeter, 1996) and have little or no ideological constraint (Converse, 1964). As such, most respondents should find it difficult to make connections between differing considerations on related issues. However, we also know that partisanship serves as a heuristic through which issue attitudes are formed and maintained (Campbell et al., 1960; Bartels, 2002). Thus, citizens are more likely to have large distributions of information to draw from on issues the parties have taken positions on and that have been framed by the media. Under such conditions, it is unlikely that any one message—movie-based or otherwise—would alter opinion distributions substantially (Chong and Druckman, 2007b). This discussion yields at least two important considerations for the present study. First, attitude change should be more likely on policy questions that are more closely related to the exact nature of the political message communicated in the film because it will require less political cognition on the part of respondents. Second, it should prove easier to affect attitudes on "nonsalient" or seldom-debated issues because the underlying distributions of information contain fewer considerations from which to sample.

Research Design

In order to test our theory, we designed and carried out a three-wave panel study in early 2011. As is relatively common among social scientists conducting laboratory or survey experiments, undergraduate students were recruited from introductory political science, sociology, and film classes at a large private university and offered extra credit for their participation.² In order

²Of the initial 425 students who expressed interest, 268 completed the first two waves of the study for an approximate response rate of 63 percent and of the 268 students who began the study, 252 completed the third wave, for a panel retention rate of 94 percent.

to limit priming effects, respondents were told that they were participating in a study of the movie rating system.

We do not believe that the use of undergraduates is cause for concern in this context. We recognize that the use of undergraduates may present concerns because undergraduates might have paid lower levels of attention to the health-care debate or might have less at stake compared to other members of the population. On the other hand, in a review of the literature on laboratory experiments, Roth (1988) finds that results obtained with college students frequently held up when tested using other populations. Furthermore, Druckman and Kam (2011) argue that the utility of student samples should depend on the context of the experiment. In this case, given the dearth of previous research on whether popular films can change political attitudes, the relatively high degree of realism of our experiment, and the relative characteristics of the sample in our study, we believe the use of a student sample is appropriate. If anything, the political characteristics of our particular sample make this experiment a conservative test of our theory—54 percent of the sample identified as conservative, and 54 percent identified as Republican or leaning Republican.³ Theoretically, these predispositions should make respondents more resistant to liberal messages on healthcare. Our experiment is also a conservative test because healthcare was the single most prominent political issue at the time the study was carried out. As our experiment took place almost a full year after the passage of the Patient Protection and Affordable Care Act of 2010 and while various legal challenges were working their way through the system, opinions should have been relatively crystallized on health-care-related issues.⁴ If popular films possess the power to change attitudes on healthcare under these conditions, they likely possess such power for other political issues.

Because our theory stipulates that attitude change from film exposure is more likely on issues that have received less framing prior to viewing, our survey asked respondents whether they support or oppose (on a five-point Likert scale) four different health-care-related policies that received various levels of attention during the health-care reform debate.⁵ For the most intensely framed item, we asked respondents their position on “government run healthcare” and for the least, we asked their position on the creation of a “new agency to oversee the insurance industry.” Between these extremes, we asked respondents about a proposal to “expand Medicare to cover the uninsured” and whether they supported or opposed a proposal for an “optional government insurance program” to compete with the private sector.

³See the online appendix at (http://www3.nd.edu/~jcastle1/Homepage/Publications_files/Moving%20Pictures_Appendix.pdf) for more statistics on the sample.

⁴Analysis of *New York Times* articles using Lexis-Nexis shows that, during the period in which we conducted the experiment, media coverage of health-care reform was at a relative peak—possibly resulting from several court rulings on the Affordable Care Act in December and January. In addition, public opinion polling shows that opposition to the Affordable Care Act (50 percent in January 2011) was at a relative high during the period of our experiment (Kaiser Family Foundation, 2013).

⁵See the online appendix for exact question wording and format.

In order to obtain a baseline measurement of health-care attitudes, a survey incorporating the health-care measures was administered to respondents approximately two weeks before movie exposure. In order to avoid priming subjects, the four health-care items were imbedded within a battery of 16 policy questions, which were further imbedded within a larger number of measures on the film, Internet, and entertainment habits of respondents. To maintain the plausibility that the study was on movie ratings, we included a section on the survey asking about movie viewership and attitudes toward the ratings system.

Respondents were asked to attend a film viewing at one of two times on the same night. Upon arrival, participants were assigned to view one of three films: *That Thing You Do!* (1996), *As Good as it Gets* (1997), and *The Rainmaker* (1997).⁶ To account for the possibility of entrance order effects, subjects were assigned to treatment groups randomly, blocking on order of entrance, resulting in a participant pool of 88 for *That Thing You Do!*, 91 for *As Good as it Gets*, and 89 for *The Rainmaker*. Tukey's honestly significant difference tests confirmed the balance of various demographic and social traits across the three treatment groups.

For a strong treatment of pro-reform arguments, *The Rainmaker* (1997) presents the story of a young man with leukemia and an insurance company that refuses to authorize payment for the bone marrow transplant he needs to survive. The insurance company is presented as an archetype of villainous corporate greed that will stop at nothing to repeatedly deny the victim's claim for coverage. Health-care issues constitute a major narrative of the film. If our theory is correct, we should see attitudinal change in a pro-reform direction. Attitudinal change should be most apparent on the question of a new agency to regulate insurance, and attitude change should encounter the most resistance on the question of government-run healthcare.

As Good as it Gets (1997) serves as the experiment's subtle treatment. In this film, an obsessive-compulsive author facilitates allergy treatments for the young son of his favorite waitress. Although this gesture provokes the development of a romantic relationship between the author and waitress, healthcare does not serve as a major narrative of the film. Like our respondents in *The Rainmaker*, health-care reform messages should cue subjects toward pro-reform effects, although we expect the magnitude of effects to be reduced because the political messages will be more difficult for viewers to identify and employ in updating attitudes (but cf. Mendelberg, 2001 for an alternative view). In addition, given that negative stereotypes of insurance companies are not a prevalent theme, we expect less evidence of change on the question of a new agency to regulate insurance companies.

Finally, for our control film, we chose *That Thing You Do!* (1996), which tells the story of a small-town rock band that briefly makes it to the "big

⁶These films were all released during the same 14-month time period, are similarly rated, and were all produced, written, or directed by respected members of the film industry.

time.” This music drama set in 1964 is not expected to cue any health-care considerations among viewers, meaning that any attitudinal change we see among respondents who viewed this film can be attributed to changes in the political environment (thereby allowing us to control for such changes in the analysis).

Respondents were asked to complete a second survey immediately after their movie concluded and a third wave of the survey via their personal computers two weeks after the movie viewing. The inclusion of a third wave represents a major improvement over many existing studies on the potential for media effects because it allows us to show that any media effects observed are the results of persistent attitudinal change and not merely priming.

Results and Discussion

Table 1 shows the survey responses from all three waves of our experiment. The columns labeled “Survey 1,” “Survey 2,” and “Survey 3” represent the mean response to each question on a 1–5 scale ranging from “strongly oppose” to “strongly support.” In keeping with national trends, respondents were relatively more opposed (lower mean values) to government-run healthcare than the other three policy issues. The column “Difference 1” represents the change between the first survey and the survey immediately after the film viewing, and “Difference 2” represents the change between the first survey and the third survey. Looking across the treatments over time, we see that for those who viewed *The Rainmaker*, attitudes on extending Medicare and creating a new agency to oversee insurance companies became significantly more pro-reform at both time 2 and time 3 ($p < 0.05$, one-tailed test). This provides encouraging initial support for our theory. However, it is necessary to compare our treatment effects to the control group to account for the possibility of time-based effects. For this reason, we move to a regression framework for a more thorough analysis.

For the remainder of the discussion, we treat our data as panel data. Table 2 presents the results of a random effects GLS regression model with the four policy questions as the dependent variables. Independent variables include dummy variables for time 2 and time 3 (with time 1 as the comparison category), dummy variables for those who watched *The Rainmaker* and *As Good as it Gets* (with the control as the comparison category), and interaction terms between time and each of the experimental treatments. Since this is a randomized experiment, and tests confirm our randomization was successful, standard demographic control variables are not necessary. If the treatments were successful in bringing about attitudinal change, we should see this reflected in the four interaction terms. Beginning with attitudes on government healthcare (column 1 of Table 2), we see that none of the interaction terms are significant. Of course, this is not entirely surprising, as our theory stipulates that change is most likely on relatively unframed issues and for those

TABLE 1
Health-Care Attitudes Across Three Waves

| | Survey 1 | Survey 2 | Difference 1 | Survey 3 | Difference 2 |
|--|------------------|------------------|-------------------|------------------|-------------------|
| Government Healthcare | | | | | |
| <i>That Thing You Do!</i> (control group) | 2.602 (0.151) | 2.705 (0.146) | 0.102 (0.076) | 2.688 (0.155) | 0.138 (0.077) |
| <i>As Good as it Gets</i> | 2.516 (0.133) | 2.659 (0.132) | 0.143 (0.084) | 2.667 (0.136) | 0.149 (0.092) |
| <i>The Rainmaker</i> | 2.528 (0.152) | 2.640 (0.138) | 0.112 (0.074) | 2.682 (0.145) | 0.118 (0.077) |
| National Insurance | | | | | |
| <i>That Thing You Do!</i> (control group) | 3.205 (0.128) | 3.114 (0.122) | -0.091 (0.082) | 3.113 (0.131) | -0.100 (0.086) |
| <i>As Good as it Gets</i> | 3.055 (0.127) | 3.165 (0.111) | 0.110 (0.093) | 3.264 (0.114) | 0.195 (0.109) |
| <i>The Rainmaker</i> | 3.180 (0.127) | 3.326 (0.120) | 0.146 (0.078) | 3.341 (0.122) | 0.129 (0.085) |
| Medicare Extension | | | | | |
| <i>That Thing You Do!</i> (control group) | 3.057 (0.123) | 3.216 (0.115) | 0.159 (0.098) | 3.013 (0.122) | -0.051 (0.091) |
| <i>As Good as it Gets</i> | 2.967 (0.116) | 3.143 (0.116) | 0.176 (0.082) | 3.167 (0.117) | 0.167 (0.088) |
| <i>The Rainmaker</i> | 2.921 (0.115) | 3.236 (0.119) | 0.315* (0.079) | 3.214 (0.111) | 0.274* (0.089) |
| Insurance Agency | | | | | |
| <i>That Thing You Do!</i> (control group) | 3.216 (0.099) | 3.216 (0.101) | 0.000 (0.067) | 3.138 (0.109) | -0.063 (0.091) |
| <i>As Good as it Gets</i> | 3.253 (0.085) | 3.286 (0.082) | 0.033 (0.072) | 3.207 (0.096) | -0.057 (0.092) |
| <i>The Rainmaker</i> | 3.090 (0.108) | 3.517 (0.107) | 0.427* (0.090) | 3.388 (0.102) | 0.270* (0.098) |

NOTE: Standard errors in parentheses. Per cell *N*s ranged from 78 to 91.

* $p < 0.05$ (one-tailed) difference within treatments.

messages most directly covered in the film, and attitudes on “government-run” healthcare are neither.

We see only weak and inconsistent evidence of attitudinal change among those who received the “subtle treatment,” *As Good as it Gets*. While the coefficients are always in the predicted direction at time 2 and time 3, they fail to attain statistical significance for both extending Medicare and creating a new insurance oversight agency. Of course, we would not expect those who viewed *As Good as it Gets* to change on the insurance oversight agency because the message of insurance company fraud was not present in the film. However, on the question of an optional insurance program to compete with private insurance, those who received the subtle treatment became significantly more liberal at time 2 ($p < 0.10$, two-tailed test) and time 3 ($p < 0.05$). In this case, the underlying difficulty with the waitress’s health insurance coverage—the

TABLE 2
Attitudinal Change from Film Exposure

| Independent Variables | Government-Run Healthcare | Medicare | National Insurance | Insurance Regulation Agency |
|-------------------------|---------------------------|-------------------------------|-------------------------------|-----------------------------|
| Time 2 | 0.102 (0.079) | 0.159 [†] (0.087) | -0.091 (0.085) | -0.000 (0.082) |
| Time 3 | 0.134 (0.082) | -0.016 (0.091) | -0.095 (0.088) | -0.061 (0.085) |
| <i>Rain</i> | -0.074 (0.201) | -0.135 (0.164) | -0.025 (0.173) | -0.126 (0.139) |
| <i>Rain</i> × time 2 | 0.010 (0.112) | 0.156 (0.122) | 0.237* (0.120) | 0.427*** (0.116) |
| <i>Rain</i> × time 3 | -0.005 (0.115) | 0.295* (0.126) | 0.226 [†] (0.124) | 0.343** (0.119) |
| <i>As Good</i> | -0.086 (0.200) | -0.090 (0.164) | -0.150 (0.172) | 0.037 (0.139) |
| <i>As Good</i> × time 2 | 0.041 (0.111) | 0.017 (0.122) | 0.201 [†] (0.120) | 0.033 (0.116) |
| <i>As Good</i> × time 3 | 0.018 (0.114) | 0.186 (0.126) | 0.290** (0.123) | 0.010 (0.119) |
| Constant | 2.602*** (0.142) | 3.057*** (0.117) | 3.206*** (0.122) | 3.216*** (0.099) |
| <i>N</i> (groups) | 268 | 268 | 268 | 268 |
| Wald χ^2 | 11.00 | 26.13*** | 11.16 | 30.86*** |
| R^2 within | 0.0207 | 0.0480 | 0.0193 | 0.0543 |
| R^2 between | 0.0004 | 0.0042 | 0.0039 | 0.0048 |
| R^2 overall | 0.0023 | 0.0102 | 0.0065 | 0.0172 |

NOTE: Entries are random effects GLS coefficients. Standard errors are in parentheses. All independent variables are coded to range from 0 to 1. The dependent variable is coded 1 = strongly oppose, 2 = oppose, 3 = neutral, 4 = support, 5 = strongly support.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [†] $p < 0.10$ (two-tailed tests).

message contained within the film—moved respondents in a liberal direction on the policy question related to this message.

We see stronger evidence of attitudinal change for those who watched the explicit treatment, *The Rainmaker*. On the issue of extending Medicare to the uninsured, although the coefficient fails to achieve significance at time 2, those who watched *The Rainmaker* were significantly more liberal at time 3 ($p < 0.05$, two-tailed test). Instead of suggesting that an attitude shift took place two weeks *after* exposure, we contend this finding is due to our control group providing the statistical check it was designed to. Referring back to Table 1, we see that all three groups exhibited liberal movement on Medicare at time 2, but only in the case of *The Rainmaker* was this shift statistically significant *within the group*. Our control group movement at time 2—while obscuring the shift of *The Rainmaker* viewers in a regression framework—suggests the possibility that some phenomenon on the political or cultural landscape was pushing for greater policy liberalism on the Medicare issue

at the time. Thus, instead of *becoming* more liberal on the Medicare issue at time 3, *The Rainmaker* group actually *maintained their liberal shift* from time 2 to time 3. At the same time, the control group rebounded to their pre-viewing attitudes at time 1. We argue it is the “return” of the control group that uncovers statistical significance at time 3 for *The Rainmaker* group in the regression framework, not increased liberalism.

Moving to the issue of the optional national insurance program, those who watched *The Rainmaker* were significantly more liberal at both time 2 and time 3 ($p < 0.05$ and $p < 0.10$, respectively). Finally, on the issue of a new government agency to regulate insurance companies, we see strong evidence of attitude change, with respondents becoming significantly more pro-reform at time 2 ($p < 0.001$) and time 3 ($p < 0.01$). Overall, these results suggest that popular movies do possess the potential to change policy attitudes among viewers, especially among relatively unframed issues. A potential caveat—albeit consistent with our theory—is that the results suggest that strong messages, like those contained in *The Rainmaker*, are more likely to induce change than more subtle ones.

Testing the Presence of Moderating Factors

An additional prediction stemming from our theory is that attitude change should be unaffected by moderating variables such as party identification, ideology, and political sophistication. In order to test this aspect of our theory, we examine a series of random effects GLS regression models, again with opinion change as the dependent variable. In this section, we focus only on Medicare, National Insurance, and Insurance Agency, because these are the three policy areas in which we saw at least some evidence of statistically significant attitude change in Table 2. In particular, we look for the presence of three likely sources of moderating effects: partisanship, ideology, and political knowledge.⁷

We begin with partisan affiliation, perhaps the most established source through which individuals evaluate political messages (e.g., Campbell et al., 1960; Bartels, 2008). In addition to the usual variables for time and treatment, we add dummy variables for Democrats (including Independents who lean Democratic) and Republicans (including Independents who lean Republican), thereby making Pure Independents the comparison category. It is to be expected that these coefficients will be significant, as this indicates that Democrats are more liberal (and Republicans are more conservative) on healthcare. We include a series of interactions between partisanship and time,

⁷We treat each of these three potential moderators separately in order to limit the presence of multicollinearity, which would tend to reduce the statistical significance of any results. Thus, compared to a model testing the three potential moderators simultaneously, presenting three separate sets of models represents a more rigorous test of the “no moderators” hypothesis.

TABLE 3
Moderating Effects for Partisanship?

| | Medicare | National Insurance | Insurance Agency |
|------------------------------------|----------------------|--------------------|--------------------|
| Time 2 | -0.091 (0.244) | 0.000 (0.243) | 0.182 (0.234) |
| Time 3 | -0.203 (0.252) | -0.109 (0.251) | -0.020 (0.241) |
| <i>Rain</i> | -0.823* (0.353) | -0.355 (0.374) | -0.407 (0.326) |
| <i>Rain</i> × time 2 | 0.472 (0.301) | 0.333 (0.300) | 0.247 (0.289) |
| <i>Rain</i> × time 3 | 0.631* (0.308) | 0.013 (0.307) | 0.401 (0.295) |
| <i>As Good</i> | -0.927* (0.414) | -0.345 (0.439) | -0.455 (0.382) |
| <i>As Good</i> × time 2 | 0.491 (0.353) | -0.100 (0.352) | -0.082 (0.339) |
| <i>As Good</i> × time 3 | 0.402 (0.359) | 0.309 (0.358) | 0.220 (0.344) |
| Democrat | 0.162 (0.339) | 0.492 (0.359) | 0.286 (0.313) |
| Republican | -1.267*** (0.316) | -0.865* (0.334) | -0.575* (0.291) |
| Democrat × time 2 | 0.127 (0.289) | -0.148 (0.288) | -0.330 (0.278) |
| Democrat × time 3 | -0.051 (0.303) | -0.064 (0.300) | -0.254 (0.289) |
| Republican × time 2 | 0.371 (0.269) | -0.08 (0.268) | -0.142 (0.258) |
| Republican × time 3 | 0.353 (0.278) | 0.064 (0.277) | 0.063 (0.266) |
| <i>Rain</i> × Democrat | 0.809† (0.442) | 0.318 (0.468) | 0.416 (0.408) |
| <i>Rain</i> × Republican | 0.772† (0.404) | 0.402 (0.427) | 0.277 (0.373) |
| <i>As Good</i> × Democrat | 0.872† (0.485) | 0.175 (0.513) | 0.314 (0.447) |
| <i>As Good</i> × Republican | 0.957* (0.456) | 0.214 (0.482) | 0.673 (0.420) |
| <i>Rain</i> × Democrat × time 2 | -0.259 (0.377) | -0.144 (0.375) | 0.193 (0.361) |
| <i>Rain</i> × Democrat × time 3 | 0.339 (0.389) | 0.358 (0.386) | -0.031 (0.371) |
| <i>Rain</i> × Republican × time 2 | -0.434 (0.344) | -0.140 (0.343) | 0.213 (0.330) |
| <i>Rain</i> × Republican × time 3 | -0.446 (0.353) | 0.243 (0.351) | -0.108 (0.337) |
| <i>As Good</i> × Democrat × time 2 | -0.628 (0.414) | 0.315 (0.412) | 0.263 (0.396) |

TABLE 3—Continued

| | Medicare | National Insurance | Insurance Agency |
|--------------------------------------|---------------------|---------------------|---------------------|
| <i>As Good</i> × Democrat × time 3 | −0.055 (0.424) | 0.028 (0.421) | 0.153 (0.405) |
| <i>As Good</i> × Republican × time 2 | −0.477 (0.388) | 0.356 (0.386) | 0.061 (0.372) |
| <i>As Good</i> × Republican × time 3 | −0.341 (0.396) | −0.054 (0.394) | −0.457 (0.378) |
| Constant | 3.727*** (0.286) | 3.545*** (0.302) | 3.455*** (0.264) |
| <i>N</i> (groups) | 268 | 268 | 268 |
| Wald χ^2 | 163.28*** | 128.57*** | 90.95*** |
| R^2 within | 0.0743 | 0.0378 | 0.0743 |
| R^2 between | 0.3261 | 0.2936 | 0.1634 |
| R^2 overall | 0.2746 | 0.2536 | 0.1424 |

NOTE: Entries are random effects GLS coefficients. Standard errors are in parentheses. All independent variables are coded to range from 0 to 1. The dependent variable is coded 1 = strongly oppose, 2 = oppose, 3 = neutral, 4 = support, 5 = strongly support. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.10$ (two-tailed tests).

representing the difference in the effect of partisanship at time 2 or time 3 for the control group. We then include interaction terms between the treatments and the dummies for partisan affiliation. These dummies therefore represent the difference between partisans and Pure Independents for those in the experimental treatments. Finally, we include a series of three-way interactions between the experimental treatments, partisanship, and time. These eight three-way interaction terms therefore represent the difference in the effect of partisanship for those receiving the experimental treatments at time 2 and time 3. If our theory is correct, each of the eight three-way interaction terms should be insignificant, thereby indicating partisanship did not act as a moderator. Indeed, this is exactly what we see in Table 3. Of the eight interaction terms, none is significant, even using the more liberal $p < 0.10$ standard. This lends strong support for our theory. Further modeling of ideology and political sophistication as moderators utilizing the same random effects GLS approach resulted in similar findings.⁸

Conclusion

For several decades researchers have largely assumed that popular films do not influence political attitudes. Our findings give reason to question these long-standing assumptions. Building on the work of Zaller (1992) and

⁸See the online appendix, where we present the results from modeling political ideology and political sophistication and discuss our findings.

others, we suggest that popular movies are capable of influencing the attitudes of viewers precisely due to their popular nature: viewers come expecting to be entertained and are not prepared to encounter and evaluate political messages as they would during campaign advertisements or network news programs. Indeed, we show that three common moderators, partisanship, ideology, and political knowledge, did not significantly affect the receipt of the pro-health-care reform messages contained in treatment films. This finding is particularly remarkable given that the experiment took place while the courts were wrestling with various challenges to health-care reform and close upon the heels of the highly charged 2010 congressional elections in which healthcare played a prominent role.

In addition, we make an empirical contribution through the design and implementation of a more rigorous experimental protocol than has previously been employed. In particular, our use of a third panel wave allows us to examine whether change held over time. We find significant evidence that viewers of both *As Good as it Gets* and *The Rainmaker* became more liberal on health-care-related policies as a result of watching the movies, with this change persisting two weeks after viewing the films. Such evidence strongly supports our contention that popular films possess the capability to change attitudes on political issues.

We believe the potential for popular films to generate lasting attitudinal change presents an important area for future research. Future studies might seek to replicate this work using other films and issues or using nonstudent samples. In addition, studies might explicitly test whether docudramas or popular films have a greater potential to change attitudes. Finally, scholars might examine the potential for movies targeted toward children to inculcate political messages at an early age. In an age where the biases of network news and talk radio programs are accepted facts among the populace and citizens are increasingly sorting their media consumption based on their political predispositions, the movie theater may prove to be one of the last sources of cross-cutting exposure to political messages. As such, greater attention to the potential attitudinal effects of popular movies is warranted.

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