Dynamics of political information transmission: How media coverage informs public judgments about politics

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Chapter 4

Informed Change, for Some: Political Information Encounters and Elite Performance Judgments

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Abstract

Representative democracy requires that citizens express informed political opinions. To do so, they must not only have access to relevant factual information and absorb what they need to know, but also *use* the acquired facts to update opinions accordingly. However, it remains unclear if citizens make "informed updates" of political judgments when relevant facts are available to them in a real-world media environment. Drawing on data from a two-wave panel survey and media content analysis, this article examines if exposure to facts about elite performance in the media alters judgments about such performance *by way of* inducing performance-relevant information. It also examines how this indirect exposure effect differs for people with different levels of motivation and sophistication for processing new political information. We find that relevant information encounters do not only induce learning, but can indirectly also change associated judgments as people use what they learn from exposure to revise these judgments. But our results also reveal how such impact of exposure is conditioned by personal characteristics: it is pronounced only among moderately sophisticated individuals with above-average motivation.

One of the most prominent democratic norms advocated in public opinion research is that citizens' political judgments ought to be informed by relevant facts. Whether polities and publics meet all of the requirements in the real world, however, often remains unclear. Are citizens provided with the facts needed to form and update opinions? As most political elite activity materializes beyond their immediate experience, citizens heavily depend on the media environment for supply of such information. Do citizens wholly absorb the facts when they encounter them? People cannot apply the facts, one would presume, without at least registering them. And finally, do citizens really use the information they acquire from encounters with political information to update associated evaluations and preferences? That people learn about political leaders and policies, after all, need not mean that they update their views about them accordingly. Supposedly, if each of these conditions – information availability, acquisition, and appliance – is fulfilled in reality, representative democracy rests on a solid foundation (Kuklinski, Quirk, Jerit, Schwieder, & Rich, 2000). And yet, we know remarkably little about whether, and if so for whom, all of the above questions can indeed be answered affirmatively.

As the availability and acquirement conditions must be met before the appliance condition can be, scholars have done much to identify the sources of political information as well as the factors that facilitate or hinder its reach and reception (Althaus et al., 2011; Barabas & Jerit, 2009). However, if political information is first and foremost a prerequisite to making competent decisions, it is paradoxical that almost no observational studies have explored the impact of information transmission *beyond* differences in learning. Instead, "most of the research on political information acquisition," writes Druckman (2005a), "treats information itself as the ultimate dependent variable" (p. 517). As political information provides much of the foundation for citizen competence (Delli Carpini & Keeter, 1996), this focus in research may be understandable. But as a result, the common presumption that inspires much of the political learning literature – that acquiring the facts *matters* for related opinions – remains just that: a presumption; one that, especially in real-world settings, has rarely ever been put to a formal test. An informed citizenry may be preferable over an ignorant one, but as Gilens (2001) notes, "the practical question is whether political judgments would be any different if citizens were better informed" (p. 379).

In order to better understand if, and under what circumstances, citizens are capable of meeting the requirements that representative democracy imposes on them, we need to know what happens when people naturally encounter political information that is pertinent to making informed judgments. The empirical analyses reported in this article explore the conse-

quences of encounters with information-inducing media coverage relative to public evaluations of elite performance. The outputs and effectiveness of political elites – that is, what they do and accomplish, or fail to – are among the primary targets to be monitored by citizens if they want to hold their leaders accountable for their actions and ensure proper representation (Delli Carpini & Keeter, 1996; Wlezien, 1995). Drawing on data from a two-wave panel survey and media content analysis, we ask if exposure opportunity to facts about elite performance in the media alters judgments about such performance *by way of* inducing performance-relevant information. Specifically, we ask how this effect differs for people with different levels of motivation and sophistication for processing new political information. We examine the presence of this "conditional indirect exposure effect" in the wake of a naturally occurring major decision-making event in European politics. We thus also broaden the focus of research on information and updating by presenting new findings from outside the typically studied context of American politics (Bullock, 2011).

Media Exposure and "Informed Updating" of Political Judgments

Despite decades of political learning research showing that people can learn from exposure to political communication, there has been little examination of whether people connect the "objective data" they absorb about the political world with their own judgments about that world (Kuklinski et al., 2000). To be sure, evidence from a pioneering literature of survey experiments suggests that exposure to relevant information *can* significantly alter people's judgments and preferences in various domains of government and policy. Gilens (2001), for example, finds that subjects who were informed about the national crime rate indicated less support for prison spending, and that those informed about the government's budget for foreign aid were less supportive of budget cuts, relative to subjects who did not receive this information. Bullock (2011), too, finds his subjects to be responsive to policy information: their attitudes on health care were strongly affected by exposure to substantive policy details. This evidence, however, is counterbalanced by evidence from other survey-based experimental research that casts doubt on citizens' true capabilities to use such information. For example, Kuklinski et al. (2000) find that offering subjects a set of facts pertinent to policy debates on welfare did little to influence their welfare policy preferences. "Those who were told the facts," the authors write, "either did not absorb them or did but failed to change their preferences accordingly" (p. 803).

Valuable as this original body of work is, then, the insights that emerge from it are not consistent. And what is more, survey experiments generally suffer from an important limitation: they conceivably overstate the influence of exposure relative to its typical influence in a natural information environment. Not only do experiments essentially force exposure to the treatment, they also provide an information environment that is artificially clean and by and large distraction-free. Such an environment makes it likely that subjects absorb and process the political information they are exposed to more thoroughly than in real life.[1] Consequently, exposure effects may be easier to observe in an experiment than in the natural world (Kinder, 2007). Indeed, in a study comparing the effects of exposure on information acquisition and subsequent opinion change in survey experiments with those observed in natural experiments on identical topics, Barabas and Jerit (2010) find exactly this. "Although our survey experiments give the impression of a 'rational public,' one that reacts to new information in a sensible way..., we found less support for this proposition when we examined public opinion in the natural world" (p. 239).

In sum, even if, in theory, political information enables citizens to review their approval of political performance and policies, it is anything but a foregone conclusion that citizens who learn the facts following relevant exposure – if they learn them at all – really use that information to update such judgments accordingly in daily life. Some, though not all, experimental studies ascertain such effects. Yet, despite the need for studies "that provide reassurance that communication effects are not confined to experimental studies" (Kinder, 2007, p. 158), scholars have only begun to explore the relationships among exposure, learning, and updating opinions in *natural* political information environments (Barabas & Jerit, 2010). One exception is a study by Gaines, Kuklinski, Quirk, Peyton, and Verkuilen (2007), who use panel data to examine information acquisition following unfolding events in the Iraq war and its impact on judgments about government performance relative to the war. They find that while most respondents acquired the facts crucial to assessing the costs and benefits of the war, learning did not translate into uniform opinion change but instead diverged opinions due to partisan differences. As Gaines and his colleagues conclude, "our results challenge the widespread, often implicit, assumption that people who know such facts generally use them" (p. 971).

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[1] Even though Kuklinski et al. (2000) observe no relationship between exposure to domain-specific facts and policy preferences, they note that their presentation of the facts "already exceeds what is likely to occur in the real world" (p. 803).

However, despite the real-world nature of events and natural circumstances under which respondents encountered pertinent information, the setting of the Gaines et al. (2007) study remains an exceptional one. Surrounding these events were a political context of "increasingly intense partisan acrimony" and, closely related, a media environment offering "massive amounts of information and commentary" (p. 958). Most policy events, of course, do not reach the level of controversy and media attention that such extraordinary events do (Barabas & Jerit, 2010; Zaller, 1992, p. 152). It is unlikely, for example, that the political contestation around routine policy events is typically as pervasive a force in nullifying the influence of new information as Gaines et al. find it to be, and even more so in cases outside the United States (Bullock, 2011). At the same time, the saturated information environment in which the study is situated provided unusually abundant learning opportunity, ensuring that most people, even the inattentive, were confronted with the facts. With regard to ordinary policy events, this assumption is unrealistic. Instead, the opportunity to learn about such events will *vary* among citizens on account of exposure to relevant media coverage (Barabas & Jerit, 2010; Prior, 2005). It remains unclear, then, how Gaines et al.'s findings generalize to cases that involve political events of a more routine nature. The present study addresses this gap in research by examining such a case outside the realm of U.S. politics.

The Conditional Nature of Exposure Effects

As the literature review above makes apparent, there is reason to remain skeptical about citizens' ability to make informed updates of political judgments when relevant facts are available to them. Yet as we argue below, it is conceivable that the magnitude of informed change varies among those exposed on account of individual characteristics that facilitate or impede the acquisition or application of political information.

To begin with, consider that much of what citizens are exposed to in the media does not contain political information. Media are indispensable sources of such information, yet media coverage that conveys information about political events continuously competes for the audience's attention with coverage *without* political content. On their turn, audience members have limited time and attention to monitor political processes (Graber, 2003; Schudson, 1998; Zaller, 2003), and many have no intention of using the informational media strictly for this purpose. Indeed, people may use these sources to satisfy a diverse range of motivational interests (Tewksbury, 2008). Accordingly, it appears plausible that variation in learning from exposure to political information occurs as a result of differences in learning *motivation* among citizens (Genova & Greenberg, 1979, p. 80; Luskin, 1990, p. 348). Not only are motivated

individuals more likely to notice such information when they encounter it (Delli Carpini & Keeter, 1996; Luskin, 1990), they are also more likely to pay attention to the political information they encounter – and thus process it more thoroughly (Chaiken, 1980; Petty & Cacioppo, 1986) – than those with little desire learn about political events.

But even if people are sufficiently motivated to register the facts that are relevant to given judgment once exposed to them, that does not automatically mean that they are adequately equipped to assess the distinctiveness of the received information and update their opinions accordingly. Indeed, for some individuals, the cognitive demands might be too high to translate information into knowledge, and knowledge into judgment. While it is one thing to learn the facts that are relevant to a particular political judgment, it is quite another to understand the substance and implications of those facts, and yet another to appropriately use what is learned to inform one's judgment (Lupia & McCubbins, 1998). An individual's store of *general political information* reflects this cognitive capacity to comprehend and evaluate new political information (Gilens, 2001; Zaller, 1992). Thus, differential change in judgments following learning should occur on account of variation in general political information.

However, the question of *how* this ability to weigh new political information moderates the impact of learning remains unsettled. According to one strand of the literature, it mainly facilitates the integration of new information into current attitude structures (Delli Carpini & Keeter, 1996, pp. 234-235; Fiske & Taylor, 1991). If so, the influence of information acquisition should be greatest among those with the highest levels of general information (Gilens, 2001). But other insights suggest that such ability serves, above all, as a resource to resist the influence of facts (Taber & Lodge, 2006). Since politically sophisticated individuals hold a comparatively large store of prior information relevant to a given judgment, new facts may carry little weight (Anderson, 1981; Bartels, 1993). Alternatively, if a greater store of general information reflects the ability to both understand *and* react critically to new facts, we may find a curvilinear moderation effect, as a low level of general political information obstructs comprehension and a high level hinders acceptance of the facts (Zaller, 1992). That would leave individuals with moderate levels of political sophistication most inclined to update.

A Conditional Indirect Exposure Effects Hypothesis

Informed updating of political judgments begins with exposure to relevant facts, yet only people who succeed in absorbing the facts can actually apply them (Gaines et al., 2007;

Kuklinski et al., 2000; Price & Zaller, 1993). Amid the uncertainty about citizens' ability to put available information to use, one proposition makes intuitive sense: new facts should be more distinctive, and hence more consequential for judgments, when the facts bear directly on those judgments (Gilens, 2001). We expect that exposure to relevant information facilitates acquisition of such information, and that information acquisition, in turn, stimulates updating of related judgments. In other words, we expect information acquisition to *mediate* the impact of exposure on political judgments. Yet in line with the theoretical stipulations above, this indirect exposure effect should transpire primarily among a subset of the population that is both sufficiently motivated to learn the facts *and* adequately skilled to decode them, once acquired. While we expect a positive moderation effect of motivation that is linear, such that the strongly motivated learn more from exposure than the poorly motivated, the positive moderation effect of general political information may either be linear or curvilinear; contingent on the extent to which higher levels of general information entail greater resistance to updating, either the highly or moderately informed are most inclined to update. Figure 4.1 shows our conceptual model, where motivation moderates the impact of exposure on information acquisition (path a_1), and general political information moderates the impact of information acquisition on associated political judgments (path b_1), controlling for exposure.[2]

Data and Measurement

We test our hypothesis of conditional indirect exposure effects by examining over-time change in judgments of elite performance (see also Gaines et al., 2007, p. 961). For citizens to effectively judge elite performance, they need performance-relevant information (see Delli Carpini & Keeter, 1996). We examine the individual-level acquisition and appliance of this information in the wake of a real-world political event in European politics: the EU summit in Brussels of December 2008 (see *Chapter 1* for details about the summit). EU summits are routine but central events in European politics that address and resolve major outstanding EU-level issues, and therefore precisely the sort of political decision-making event that ought to inform the public about key manifestations of EU performance. As pointed out in *Chapter 1*, the two-day summit addressed several key policy challenges facing the EU (climate change, the financial crisis, and institutional reform); a political context in which EU perfor-

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[2] Without inclusion of information acquisition in the model, the exposure-to-judgments path represents the *total effect* of exposure (path c_1). Path c'_1 in the model represents the *direct effect* of exposure on change in political judgments (see Preacher & Hayes, 2008). It is depicted as a dashed line because we do not anticipate a direct exposure effect.

Figure 4.1 Conceptual model of the conditional indirect impact of media exposure on change in elite performance judgments.
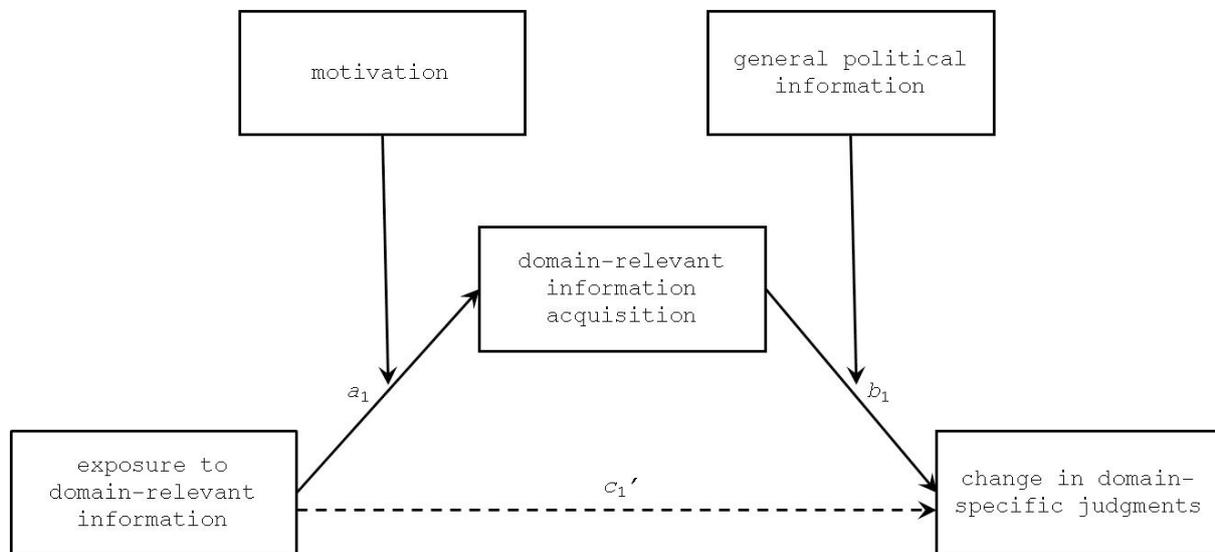
mance was of high practical and symbolic importance. Even so, the event generated a modest amount of media coverage relative to several other stories on the media's agenda (see *Chapter 2*). We draw on data from a panel survey ($n = 1{,}127$) administered by TNS-NIPO and collected in the Netherlands about two weeks before (t_1) and directly after (t_2) the summit (see Appendix A for data details).

Elite Performance Judgments

While elite performance comprises more than one dimension (Rohrschneider, 2002), our focus here is on utilitarian performance, the most frequently studied dimension of performance in European politics. Evaluations of utilitarian performance incorporate judgments of the costs and benefits of performance; of how much citizens (and the country as a whole) gain or lose from performance. The instrumental nature of such evaluations can be conceived broadly in that they capture not only perceived financial or material benefits, but also post-material benefits and, in the case of the EU, "benefits that are not available at the domestic level" (Sánchez-Cuenca, 2000, p. 151), such as peace and stability or environmental protection. We measure utilitarian performance judgments at t_1 and t_2 with four survey items (shown in Appendix B), among them items that feature prominently in the utilitarian research tradition (e.g., Anderson & Reichert, 1996; Eichenberg & Dalton, 1993; Gabel, 1998; Gabel &

Palmer, 1995) and items considered suitable indicators of perceived benefits associated with EU policy performance (Marsh, 1999; Mikhaylov & Marsh, 2009; Sánchez-Cuenca, 2000). Responses to all items were measured on a 1-7 scale. We average the responses to create index measures of utilitarian performance judgments at t_1 ($M = 4.30$, $SD = 1.19$, alpha = 0.84) and t_2 ($M = 4.08$, $SD = 1.20$, alpha = 0.83).

Performance-Relevant Information Acquisition

We measure performance-relevant information acquisition using a unique battery of six questions from the post-summit survey addressing the most significant facts about EU performance that came forward in media coverage about the summit (see also *Chapter 1*, fn. 12). Specifically, we asked our respondents three questions about the energy and climate change package, one question about the European economic recovery plan, and two questions about the Lisbon Treaty ratification process, *all of which focus on EU-level action in relation to these issues* (including causes and consequences of such action). It is important to stress the type of factual information acquisition we measure, because the correct answers to this bundle of questions are pieces of information that bear direct relevance to judgments about EU performance – indeed, precisely the sort of information that can influence such judgments (Druckman, 2005a, p. 517; Gilens, 2001; see also Kuklinski et al., 2000, p. 792).

Crucially, the questions refer to expressions of EU performance that emerged in the period *between* the two panel waves. Given the timely nature of our information items, respondents almost certainly needed to have encountered relevant media coverage about the summit in the time period between the two interviews. We can be confident, then, that we measure actual *acquisition* of political information. All questions had a multiple-choice format including four response categories and a don't know option (see Appendix B for a full overview). We scored incorrect and don't know answers 0 and correct answers 1 (see Luskin & Bullock, 2011). In the multivariate analyses below, we use a single composite measure of performance-relevant information ($M = 2.31$, $SD = 1.89$, KR-20 = 0.76).[3]

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[3] All t_2 interviews were completed between one and five days after the final summit day. When we grouped respondents according the date of the second interview, we found no significant differences in information acquisition among the groups. We also explored the impact of day of interview in the multivariate analyses reported below. We found that it did have none beyond the other variables in the models, nor that it interacted with media exposure in predicting information acquisition. Thus, any bias on account of forgetting appears to be of little concern here (see also Lodge, Steenbergen, & Brau, 1995, p. 324, fn. 6).

Media Exposure

In an experiment, subjects in the treatment condition always receive the treatment. However, in the real world, in which media coverage containing the information of interest is a naturally occurring treatment, to measure exposure is to estimate the *probability* of exposure (Barabas & Jerit, 2010; Slater, 2004). Such an estimation calls for survey data identifying which media sources individual respondents typically rely on as well as content analytical data revealing which sources included the relevant information, much as the political learning literature now recommends (Druckman, 2005a, pp. 517-518). In the present study, we draw on both types of data.

Our approach to determining individual source reliance approximates that of Barabas and Jerit (2010), who asked respondents to report which media source they were using "most of the time" (pp. 232, 235). In our survey, respondents indicated which sources they are using most days in a typical week. We consider a respondent to rely on a source if (s)he consults the source on at least four days in a typical seven-day period.[4] Respondents were able to choose from a list of national television sources, including hard news, current affairs, soft news and infotainment programs, and from a subsequent list of nationally available paid and free news-papers (see also Dilliplane, Goldman, & Mutz, 2013). To identify the sources that provided performance-relevant information in their coverage, we content analyzed all sources listed in the survey questionnaire (see Appendix A and B for details). With the media content data collected, we scored respondents on exposure according to reliance on (0) not one, (1) one, or (2) more than one source with coverage of the summit and its outcomes ($M = 1.03$, $SD = 0.77$).[5] These scores indicate *low*, *moderate*, and *high* media exposure and comprise 28, 41, and 31 percent of the sample, respectively. Our exposure measure thus incorporates variation in relevant information transmission among media sources as well as variation in media choice among respondents. As Barabas and Jerit (2010) point out, "[s]uch a measure is superior to traditional media use variables, which only indicate that a person reports paying attention to the news in general" (p. 232).

Motivation and General Political Information

We tap internal motivation with *political interest* (Luskin, 1990, p. 335; see also Delli Carpini & Keeter, 1996; Iyengar et al., 2010; Prior, 2010). We measured interest in politics at

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[4] Our results are the same irrespective of whether we determine source reliance at a minimum of 4 or 5 days of usage in a typical week.
[5] Only 1.8 percent of respondents were identified as being reliant on more than two media sources with relevant information. Our results remain unchanged when these respondents are excluded from the analyses.

t_1, on a 1-7 scale ($M = 4.01$, $SD = 1.53$). *General political information* is an additive scale of scores from eight questions about national and EU-level political actors and offices from the pre-summit interview at t_1 ($M = 4.91$, $SD = 1.99$, KR-20 = 0.70).[6] To account for the possibility of a nonlinear moderation effect, we categorize respondents according to three distinct levels of general political information. On the basis of a sample split at one standard deviation below and above the mean index score, we create dummy variables for *low, moderate,* and *high* levels of general information. The three groups comprise 24, 51, and 25 percent of the sample, respectively (see also Hobolt, 2007, p. 179).

Analysis and Results

Two linear models represent the conceptual model depicted in Figure 4.1 in statistical form. The first is the mediator variable model, which estimates learning from exposure. Because we examine this relationship in the natural world, in which the treatment condition is self-selected rather than randomly assigned, the mediator model controls for the most important individual-level confounders of learning, including age, gender, education, income (see Appendix B for measurement details), and, additionally, general political information (Delli Carpini & Keeter, 1996, p. 186; Druckman, 2005b, p. 473).[7] Accounting for these individual characteristics – including political interest, the presumed moderator – minimizes inferential concerns related to media selection and endogeneity.[8] After an initial assessment of the direct effects of exposure, we extend this model to include a linear by linear interaction term between exposure and political interest in order to test for conditional indirect effects.

The second linear model is the dependent variable model, which estimates updating of performance judgments from learning, with exposure controlled. It estimates change scores in performance judgments – derived by subtracting the individual t_2 values of these judgments from their individual t_1 values – as a function of the independent variable and the mediator. The model warrants further specification by inclusion of the t_1 judgments as a covariate, given that the magnitude and direction of change is likely to be correlated with prior judgments (Bartels, 2006; Finkel, 1995). We expand the dependent variable model later on with general

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[6] Given the relatively static nature of the correct answers to these questions, we measure general political information that was acquirable well before performance-relevant information (see Appendix B for question details).
[7] Controlling for general information also averts the possibility of reverse causation (see Eveland, Hayes, Shah, & Kwak, 2005).
[8] Following Malhotra (2008, p. 929), we also control for duration of information response (see also *Chapter 2*). We include dummy variables for low and high response duration, coded 1 for completion times below 1 and above 3 minutes (or below 10 and above 30 seconds per question) respectively, and 0 otherwise.

political information and its interaction with performance-relevant information. As this interaction may take a linear *or* curvilinear form, the model lets information acquisition interact simultaneously with two dummies representing respondent subgroups with low and high general political information, respectively, leaving the middle category – the moderately informed individuals – serve as the reference group.

Direct and Indirect Exposure Effects

Before we examine the indirect effect of exposure on political performance judgments as well as the conditional nature of that effect, we assess the magnitude of its direct effects. With respect to path a_1 in Figure 4.1, which is estimated as part of the mediator variable model, we find exposure to performance-relevant information to be a positive and significant cause of acquisition of such information ($b = 0.2169$, $p < 0.001$ for a two-tailed test, as all tests reported below) above and beyond all other predictors in the model. Turning to the dependent variable model, we next assess the total effect of exposure on change in performance judgments (path c_1); that is, the direct effect of exposure on updating of judgments without accounting for the effect of information acquisition, our proposed mediator. This effect is statistically different from zero ($b = 0.0976$, $p < 0.01$). However, adding information acquisition to the model renders the direct effect of exposure insignificant ($b = 0.0474$, $p = 0.15$). Acquiring performance-relevant information, we find, causes significant change in political performance judgments above and beyond exposure and controlling for prior judgments ($b = 0.0680$, $p < 0.001$).

In sum, our findings reveal positive and significant paths of influence running from exposure to learning (path a_1) and from learning to updating of judgments (path b_1), but no significant direct path from exposure to updating (path c'_1). Our interest is in the *indirect effect* of exposure on performance judgments through relevant information acquisition. This effect is the product of the a_1 and b_1 paths. A formal test for an indirect effect requires that we assess if $a_1 b_1$ is significantly different from zero (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; for a recent application of this approach, see Schuck & de Vreese, 2012). The indirect effect of exposure is 0.0147 (0.2169 multiplied by 0.0680). According to a Sobel test (Sobel, 1982), this effect is statistically significant ($SE = 0.0052$, $Z = 2.8423$, $p < 0.01$). More appropriately, however, we can apply bootstrapping; a nonparametric resampling approach that does not impose the restrictive assumption that the sampling distribution of $a_1 b_1$ be normal (Preacher & Hayes, 2008; Shrout & Bolger, 2002). Employing an analytical procedure developed by Hayes (2012), we perform estimation on the basis of 10,000 resamples and de-

rive a 95-percent bias-corrected bootstrap confidence interval for the indirect effect that does *not* include zero. In other words, the indirect effect is significantly differently from zero.[9] Thus, irrespective of the estimation strategy, we find exposure, as an inducer of information, to be a significant indirect cause of change in elite performance judgments.

The Indirect Conditional Effect of Exposure

Our central hypothesis is that the magnitude of this indirect exposure effect *varies* among those exposed. If our hypothesis holds, then the average indirect exposure effect reported above conceals important variation in the relative strength of the influence of relevant information encounters among specific subgroups of individuals.

Before we explore such variability, we examine if each of the constituent paths that produce the indirect effect are indeed moderated as projected. With regard to path a_1, we find a positive and significant linear by linear interaction between media exposure and political interest ($b = 0.1213$, $p < 0.001$). In other words, politically interested individuals absorbed increasingly more performance-relevant information relative to less interested individuals as the likelihood of exposure to such information increased. The model also fits better with the interaction term included ($\Delta R^2 = 0.01$, $p < 0.001$). Following Aiken and West (1991), we probe this interaction at meaningful values of political interest to get a more accurate sense of when exposure leads to information acquisition. Doing so reveals that exposure did not significantly induce learning among individuals with a level of interest equal to one standard deviation below the mean ($b = 0.0333$, $p = 0.69$), but that it did stimulate learning to a statistically significant degree among those with levels of interest at the mean ($b = 0.2187$, $p < 0.001$) and at one standard deviation above the mean ($b = 0.4041$, $p < 0.001$), all else equal. Clearly, acquiring information about political performance required at least a moderate degree of interest in politics.[10]

With regard to path b_1, from information acquisition to revision of judgments, we also find evidence of moderation. Specifically, we find that learning about performance negatively interacts with each of the two dummy variables representing low ($b = -0.0733$, $p < 0.10$) and

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[9] To obtain bootstrap confidence intervals for the indirect exposure effect, we must specify the dependent variable model as an "unconditional" change score model (see Finkel, 1995).

[10] We also examined if individuals already dissatisfied with elite performance at the outset were more likely to avoid new facts about performance while exposed than those with initially more positive views (see Jerit & Barabas, 2012). To account for the possibility of such "willful ignorance," we reestimated an extended version of the mediator variable model including the original judgments at t_1 as well as an interaction term between that variable and exposure. While, in line with the willful ignorance hypothesis, the direction of the interaction was positive, it was not statistically significant, suggesting no selective pattern of learning on account of initial (dis)approval of elite performance (see also Gaines et al., 2007).

high ($b = -0.0802$, $p < 0.05$) general political information, respectively. This finding indicates a nonlinear moderation effect of general political information: relative to the evaluations of those low and high in general information, the evaluations of *moderately* informed individuals were affected most strongly by new and relevant information. Probing the interaction at each level of general political information confirms that acquiring facts about performance did not lead to significant updating of judgments among the least informed ($b = 0.0261$, $p = 0.50$) or best informed ($b = 0.0192$, $p = 0.47$), but that it did significantly affect the views of individuals with medium levels of general information ($b = 0.0995$, $p < 0.001$). The direction of change is positive, suggesting that performance-relevant information generated more satisfaction with elite performance.[11] Extending the model with the two interaction terms also improves model fit ($\Delta R^2 = 0.01$, $p < 0.05$).

As both paths that causally link exposure to updating of performance judgments are subject to moderation, it follows that the indirect impact of exposure, too, varies according to individual levels of general political interest and information. Following Preacher, Rucker, and Hayes (2007), we estimate this conditional indirect effect for combinations of respondent scores on both of these moderators. This effect equals the product of the conditional effects of exposure and information acquisition from the mediator and dependent variable models, respectively. Specifically, we calculate the conditional indirect effect of exposure by conditioning on all possible combinations of levels of political interest (ranging from 1 to 7) and general political information (low, moderate, and high). We take two approaches to estimation. First, we draw on the Sobel test, assuming – not unreasonably so given the size of our sample (Preacher et al., 2007, p. 213) – that the sampling of the conditional indirect effect is normally distributed. Second, to verify this normal-theory test, we draw on bootstrapping, using Hayes's (2012) computational procedure to obtain a 95-percent bias-corrected confidence interval for the conditional indirect effect. Reassuringly, the two estimation strategies produce very similar results.

As the results of both the Sobel test (not shown) and bootstrapping (shown in Table 4.1) indicate, there is no significant effect of exposure on elite performance judgments

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[11] It is possible that individuals with negative prior judgments about elite performance were more resistant to adopting a more favorable view following learning than those who were already approving. If any such bias in information processing is present, it may well manifest itself most prominently among the highly informed (e.g., Taber & Lodge, 2006). Having constructed two three-way interaction terms between the low and high general information dummy variables on the one hand, and information acquisition and prior judgments on the other, we did find a positive interaction effect among those with a high level of general political information, but this effect did not reach the standard levels of statistical significance. At best, "predispositional resistance" (Zaller, 1992) to updating only partially accounts for the observed opinion stability among the highly informed (see also Bullock, 2011, pp. 511-512).

Table 4.1 Effects of media exposure on change in elite performance judgments through performance-relevant information acquisition by levels of general political information at values of political interest

| | Level of general political information | | | | | | | | |
| | Low | | | Medium | | | High | | |
Political interest	Indirect effect	LL95	UL95	Indirect effect	LL95	UL95	Indirect effect	LL95	UL95
1 ("very low interest")	−0.0019 (0.0090)	−0.0298	0.0110	−0.0121 (0.0099)	−0.0362	0.0045	0.0028 (0.0051)	−0.0031	0.0200
2	−0.0003 (0.0045)	−0.0143	0.0062	−0.0021 (0.0073)	−0.0180	0.0115	0.0005 (0.0028)	−0.0030	0.0105
3	0.0012 (0.0056)	−0.0069	0.0176	0.0079 (0.0059)	−0.0019	0.0223	−0.0019 (0.0033)	−0.0127	0.0018
4	0.0028 (0.0110)	−0.0184	0.0262	0.0178[a] (0.0066)	0.0071	0.0337	−0.0042 (0.0058)	−0.0180	0.0058
5	0.0043 (0.0169)	−0.0289	0.0390	0.0278[a] (0.0090)	0.0129	0.0490	−0.0066 (0.0090)	−0.0258	0.0109
6	0.0059 (0.0234)	−0.0392	0.0543	0.0377[a] (0.0122)	0.0176	0.0662	−0.0089 (0.0122)	−0.0356	0.0134
7 ("very high interest")	0.0074 (0.0291)	−0.0491	0.0691	0.0477[a] (0.0154)	0.0231	0.0847	−0.0113 (0.0153)	−0.0446	0.0164

Note. Cell entries are conditional indirect effect estimates using OLS regression with standard errors in parentheses and lower and upper bounds of 95-percent bias-corrected confidence intervals based on 10,000 bootstrap samples. The dependent variable is a raw change score in political performance judgments (i.e., $Y_{i2} - Y_{i1}$). [a] Significantly different from zero in a two-tailed test, as zero is not contained in the confidence interval.

through relevant information acquisition among respondents who rated their level of political interest below 4 on the 1-7 scale. Thus, irrespective of people's overall political expertise, judgments of those with a less than average motivation to follow politics did not notably change as a result of exposure to performance-relevant information. However, among the remaining subsample of respondents, a large subset of individuals did not update following exposure either, even if they presumably acquired the information of interest given their willingness to attend to political affairs. Such was the case among individuals classified as holding low or high levels of general political information. As the results of the Sobel test show, the indirect effect reaches standard levels of statistical significance only among respondents in the middle category of general information with political interest values of 4 – virtually equal to the mean of 4.01 – and higher.[1] As can be seen in Table 4.1, bootstrapping corroborates the results of the Sobel test: only among the aforementioned group of individuals do we find indirect exposure effects with confidence intervals beyond zero.[2] The magnitude of the conditional indirect effect increased as political interest increased, with the largest effect occurring among moderately informed individuals with the highest level of interest.

Our key finding, then, is that only moderately informed individuals with at least average political interest both learned about performance from exposure *and* accordingly changed their opinions about performance to a significant degree. Taken as a whole, these results support our hypothesis of conditional indirect exposure effects.

Discussion and Conclusion

A well-functioning representative democracy requires that citizens learn what they need to know to evaluate their political leaders in a competent manner. In view of the impressive growth of the political information literature over the past decades, it is evident that the democratic significance of information acquisition is well acknowledged by scholars in political communication. Awareness of the important types of political information is certainly imperative to competent citizenship, but as others have noted before us (Kuklinski et al., 2000), it is not sufficient: such information must be *used*. Indeed, the normative case for an informed citizenry becomes much less compelling if citizens fail to use the facts to inform

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[1] Using the Sobel test, the indirect effect estimates at political interest values of 4, 5, 6, and 7 are 0.0216 ($p < 0.01$), 0.0337 ($p < 0.001$), 0.0457 ($p < 0.001$), and 0.0578 ($p < 0.001$), respectively.

[2] Effects with confidence intervals beyond zero remained statistically significant with bootstrapping using 99-percent confidence intervals.

their opinions about the political world. And yet, we know a lot more about political learning than we do about updating of political judgments. If our goal is to gain a greater understanding of citizens' true capabilities in democratic life, we must examine if political information acquisition carries real consequences, principally for those judgments to which the acquired facts relate.

The present study, which examines change in opinions about elite performance in the wake of a naturally occurring major political decision-making event, finds evidence of both acquisition *and* subsequent appliance of political information. In other words, the findings presented here suggest that natural encounters with relevant information do not only induce learning, but can indirectly also lead people to update associated judgments because people use what they learn from exposure to revise these judgments. It may seem obvious that media coverage, by informing citizens about what their political leaders do, leads citizens to update their judgments about these leaders. It is worth repeating, however, that the normative proposition that citizens sensibly respond to new and relevant information when it is presented to them has thus far rarely been tested – let alone verified – in the natural world. Indeed, unlike most prior work, the causal indirect influence of exposure that we report is observed in a real-world environment where, for a number of reasons, such effects are less likely to emerge than in the controlled setting of laboratory or survey experiments, and this adds to the external validity of our findings (Barabas & Jerit, 2010; Kinder, 2007). Moreover, our study is among the first to document this indirect exposure effect using panel data (see also Gaines et al., 2007), which, relative to cross-sectional data, produce more modest but also more accurate estimates of causal effects (Bartels, 2006; Levendusky, 2011).

It is important to note, furthermore, that most scholarship in this domain of research has proposed other causal mechanisms through which exposure to politics in the media can alter opinions, and these typically stress the persuasive over the informative nature and consequences of media exposure. For example, Zaller (1992) argues that citizens adjust their opinions primarily on account of reception of persuasive appeals and cues by political elites. And researchers of priming such as Iyengar and Kinder (1987) maintain that media exposure influences people's evaluations of political leaders simply by altering the issues on which citizens judge these leaders. These and other models of opinion change suggest that citizens do little reasoning for themselves before arriving at their political views, yet such models generally leave unanswered the question how citizens would respond if a coherent set of relevant facts were available. To be sure, such alternative paths of media influence may well compete with – or even outweigh – its educational impact, and much further research is needed to disentangle

the relative influence of persuasive versus informational elements of media messages.[3] Meanwhile, our findings suggest that, at least when citizens have an actual opportunity to learn the facts, the impact of information-inducing exposure can be sizable, even in the context of a single political event. Overall, the informational content of exposure may be more important than prior opinion change research has presumed (Bullock, 2011; Gilens, 2001; see also Lenz, 2009).

But at the same time, by revealing significant between-respondent variability in updating-by-way-of-learning, our study highlights the obstacles towards informed citizenship that emerge at the individual level. Such variability makes apparent that, despite that availability of new information, large segments of the public appear unreceptive to reviewing prior judgments. For these citizens, the problem is not that the information of interest does not reach them. Instead, many of them do not possess enough motivation or ability (or not enough of both) to adequately process the political information that *is* encountered; hence, exposure makes little difference. Although the precise threshold level of what amounts to "enough" motivation and prior information may vary from one context to the next, our findings underscore the importance of *both* individual attributes as facilitators (or obstructers) of informed opinion formation and change (Delli Carpini & Keeter, 1996). But we also find that, as far as people's general stock of information is concerned, *high* levels, too, dilute responsiveness to new information. Political expertise, it seems, does not merely facilitate comprehension, but also fosters resistance to change, at least when the judgments at hand concern elite performance. For sophisticated individuals, then, such judgments may be too well-established in previously acquired information and preexisting considerations to allow for short-term updates (see also Zaller, 1992).

Of course, we recognize that the political and informational environments that surround real-world political decision-making events also vary, both across time and location. These contextual parameters, we presume, are bound to affect the role of motivation and ability as regulators of informed change. For example, in environments characterized by a narrow distribution of pertinent facts, learning strongly hinges on motivation, yet under conditions of broad information availability (e.g., see Gaines et al., 2007), when the relevant facts are hard to avoid, even the poorly motivated tend to acquire information (see *Chapter 3*; Iyengar et al., 2010; Zukin & Snyder, 1984). And in contexts characterized by strong elite polarization and cueing, one can expect political sophistication to more strongly reflect "skill in resisting un-

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[3] As an example of pioneering studies within this research program, Bullock (2011) finds that individual judgments about changes in health care policy were more affected by policy facts than by party cues.

wanted information" (Gaines et al., 2007, p. 959) – and, hence, to inflict greater predispositional bias in updating (e.g., Taber & Lodge, 2006) – than in areas of public life where political contestation is less pervasive. At the micro level, meanwhile, the importance of motivation and ability for adequate processing of media messages may, at least in part, depend on how the facts are presented or contextualized in these messages (e.g., see Graber, 2001; Kuklinksi, Quirk, Jerit, & Rich, 2001).

These stipulations make apparent that, in order to draw firmer conclusions about citizen competence and the facilitatory role of the media, future studies must specify in greater detail, and across multiple levels, how individual citizens and the political communication environment interact. The findings presented here contribute to this broader research program by demonstrating that the challenges toward overcoming "political information deficits" in public opinion are better appreciated when characterizing the real-world role of media exposure in informing citizens' political judgments as both conditional and indirect.

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