

# TRIAL BY FIRE

## A Natural Disaster's Impact on Support for the Authorities in Rural Russia

By EGOR LAZAREV, ANTON SOBOLEV, IRINA V. SOBOLEVA,  
and BORIS SOKOLOV\*

IN the summer of 2010 central Russia experienced disastrous, unprecedented forest fires. Observers predicted that the fires of 2010 “should have exposed and discredited the Russian government at its most incompetent and should permanently taint those in charge.”<sup>1</sup> In line with this argument are influential scholarly results on the negative effect of natural disasters on voting for incumbents in democratic countries.<sup>2</sup> Furthermore, the cross-country analysis of political effects of natural disasters revealed that they are more likely to provoke instability and removal of leaders from office under authoritarian regimes than under democracies.<sup>3</sup> And an early study of the effects of the Russian fires of 2010 on regional elections that were held just two months after the disaster shows that in the areas closer to the fires, electoral results for the ruling party were lower than the average, thus supporting the previous literature.<sup>4</sup>

Our study was conducted in the summer of 2011—exactly one year after the fires. It therefore allowed us to capture the effect of the natural disaster, as well as the effect of the governmental response. We test the effects of the exogenous variation in exposure to the fires with individual-level data through a survey of almost eight hundred respondents in the

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<sup>1</sup> Shevtsova and Kramer 2010.

<sup>2</sup> Achen and Bartels 2004.

<sup>3</sup> Quiroz Flores and Smith 2013.

<sup>4</sup> Szakonyi 2011.

four most severely affected regions of Russia, namely, Nizhny Novgorod, Ryazan, Lipetsk, and Voronezh, in thirty-four burned and thirty-six unburned villages, which were randomly selected. In contrast to the previously stated predictions, we found that exposure to the disaster and subsequent governmental performance in providing relief led to the substantial increase in support for the authorities at all levels, namely, for the United Russia Party, the village head, the governor, Prime Minister Putin, and President Medvedev. Our study thus confirms the logic of the scholarship, which stresses that the impact of natural disasters on support for authorities is conditional on governmental performance during and after the shock.<sup>5</sup> However, we go further and show that the rise in support for the government cannot be attributed solely to “voter gratitude”<sup>6</sup> for the generous aid. Our analysis isolates the crucial significance of the demonstration effect from the governmental performance—magnified by the intra- and intervillage information spillovers and direct encounters with high government officials who visited affected areas—for determining support for the government.

The issues of political support and legitimacy are foundational for political science. Beginning with Weber’s work on political authority and further development of the issue by David Easton, Seymour Martin Lipset, and others, legitimacy is considered to be a complex phenomenon that is ultimately expressed in attitudes toward the political system in general, as well as toward particular governmental bodies.<sup>7</sup> It is especially interesting to understand the problem of popular support for a nondemocratic government, because such a regime operates without institutionalized accountability to the people.<sup>8</sup> Recent studies of Russia, in particular, have found that public support for Putin and his political system depends on the perceptions of economic performance, which in turn is reflected in objective economic indicators.<sup>9</sup> Other important factors include control over the media and the political sphere and the imposition of high formal barriers to entering the political market that eliminate serious challengers.<sup>10</sup>

All of these factors, however, cannot fully explain the logic of political support in nondemocracies, which can be unpredictable by the measures of economic performance and political repression.<sup>11</sup> It is clear

<sup>5</sup> Arceneaux and Stein 2006; Gasper and Reeves 2011.

<sup>6</sup> Bechtel and Hainmueller 2011.

<sup>7</sup> Lipset 1960; Rogowski 1974; Easton 1975; Dalton 2004.

<sup>8</sup> Geddes and Zaller 1989; Colton and McFaul 2003; Magaloni 2006.

<sup>9</sup> Treisman 2011; Ross, Mishler, and Munro 2011.

<sup>10</sup> Enikolopov, Petrova, and Zhuravskaya 2011.

<sup>11</sup> Magaloni 2006.

that no political regime can survive only through the use of force or money: some kind of legitimacy—the belief that the authority is rightly held—is necessary. We argue that examining attitudinal changes under out-of-equilibrium conditions could clarify more generally the obscure foundations of state legitimacy. For example, one may refer to the “rally ’round the flag” effect that explains a short-term increase in political support for the president of the United States during periods of war and international crisis.<sup>12</sup> In our view, natural disasters provide a unique opportunity to test the determinants of political support, because at moments when people turn to their rulers to do something, they can gauge the efficacy of the government.

Natural disasters have been treated as a political variable since the pioneering work of F. Glenn Abney and Larry Hill, who showed the effects of hurricanes on the results of urban elections.<sup>13</sup> However, the theme did not attract serious scholarly attention until the work of Christopher Achen and Larry Bartels, who presented evidence that citizens blame the incumbent government for different natural disasters.<sup>14</sup> Achen and Bartels concluded that voters are actually irrational or “blind” in their attribution of blame to politicians, since governments have nothing to do with events such as unpredicted shark attacks. In contrast, Kevin Arceneaux and Robert Stein and John Gasper and Andrew Reeves found that voters are not “blind” and their behavior is not absurd: they punish politicians for severe weather damage only if the responsible officials performed badly.<sup>15</sup>

Interest in the effects of natural disasters skyrocketed with Hurricane Katrina in 2005. Neil Malhotra and Alexander Kuo, for example, studied public responses to it and found that the attribution of blame to different levels of government had a partisan bias,<sup>16</sup> and Jowei Chen showed how relief spending affected political participation among different groups of voters.<sup>17</sup> Recently, the use of natural disasters to explore political phenomena has been extended beyond the American context. Michael Bechtel and Jens Hainmueller examined the Elbe flooding of 2002 and found that massive aid increased incumbent party vote share

<sup>12</sup> Mueller 1970. Another insightful example of the study of attitudinal change in the out-of-equilibrium conditions can be found in Erikson and Stoker 2011, who exploited the military draft lottery from the time of the Vietnam War as a source of exogenous shock.

<sup>13</sup> Abney and Hill 1966. Within political science other important studies on natural disasters prior to Achen and Bartels 2004 also include Olson, Nigg, and Podestá 1989; and Olson, Olson, and Gawronski 1999.

<sup>14</sup> Achen and Bartels 2004.

<sup>15</sup> Arceneaux and Stein 2006; Gasper and Reeves 2011.

<sup>16</sup> Malhotra and Kuo 2008.

<sup>17</sup> Chen 2013.

in German general elections.<sup>18</sup> Similar results were found in India: Andrew Cole et al. showed that voters there punished the incumbent party for bad weather but that provision of relief slightly mitigated this effect.<sup>19</sup>

The first systematic comparative study on the political effects of natural disasters was undertaken by Alejandro Quiroz Flores and Alastair Smith.<sup>20</sup> The authors theorized that the occurrence of disasters had different effects under democratic and authoritarian regimes. They found that in the latter, disasters are likely to provoke instability and removal of the leaders from office. Empirical support for the theory comes from cross-country comparisons that may be problematic, since the regimes have different potential outcomes, meaning that occurrence of natural disasters could lead to outcome X in some countries but to outcome Y in others, as a result of some unobserved characteristics not necessarily related to political regime per se.

Adding an authoritarian dimension to the otherwise democratic-based literature on the political responses to the disasters allows us to test the impact of exogenous shocks on individual political preferences in the absence of formal accountability, a noncompetitive political sphere, and low expectations on the part of the population. In other words, it enables us to explore whether natural disasters lead to the same outcomes under democracies and autocracies, considering that the latter lacks the very opposition and free media that help to articulate the blame for disaster and demand for aid in the former.<sup>21</sup> This question is especially interesting in regard to the so-called hybrid regimes<sup>22</sup>—a special category of authoritarian regime that embraces some democratic features, including the popular mandate. Public support under such regimes, indicated by political leaders' approval ratings, is an important phenomenon of interest, because unlike the subjects of the full-fledged authoritarian systems, citizens under hybrid regimes experience less pressure to engage in "preference falsification."<sup>23</sup> Furthermore, focusing on public support for the government affords us a different perspective on the determinants of the authoritarian regimes' performance. In the recent literature, the emphasis was placed on the institutional factors of authoritarian stability and breakdown, such as elections,<sup>24</sup> parties,<sup>25</sup> and

<sup>18</sup> Bechtel and Hainmueller 2011.

<sup>19</sup> Cole, Healy, and Werker 2012.

<sup>20</sup> Quiroz Flores and Smith 2013.

<sup>21</sup> Javeline 2003a.

<sup>22</sup> Levitsky and Way 2010. Russia under Putin is usually put in this category along with a diverse set of other countries such as Iran, Venezuela, Nigeria, Kenya, and Turkey.

<sup>23</sup> Kuran 1991.

<sup>24</sup> Blaydes 2011.

<sup>25</sup> Magaloni 2006; Gelbach and Keefer 2011.

legislatures.<sup>26</sup> However, we know institutions emerge endogenously<sup>27</sup> and thus are problematic in assessing the causal determinants of a regime's performance. By contrast, an exogenous shock presents a rare opportunity to capture the dynamics of a regime's performance by assessing the effects of blame attribution and resource redistribution.

In addition to the exploration of the impact of natural disasters under authoritarianism, this research enriches the literature in several ways. On the conceptual level, we distinguish a previously underspecified mechanism of demonstration effect that links governmental performance with attitudes toward authorities. We argue that this mechanism is qualitatively different from the previously emphasized "blind retrospection" and "voter gratitude" mechanisms, because it highlights a subjective but general assessment of the government, rather than personal perceptions of self-interest deriving from government policies. Empirically, first we introduce original individual-level data that are an important complement to the literature mostly based on the aggregate data. Second, we explicitly study the effect of spillovers—an important and understudied research avenue.

Finally, our article is useful for understanding the persistence of Putin's rule in Russia. We argue that support for authorities depends on their performance, a conclusion that challenges the view that there is a peculiar "Russian political culture" that is invariably present in minds of the citizens. The constant—culture—cannot explain the change. In addition, by isolating the pervasiveness of the demonstration effect—governmental performance—we give a potential answer to how Putin, a politician who had a single-digit approval rating at the beginning of his term in power, has managed to reach and hold popular support of 70–80 percent of the population for more than ten years. Extensive television coverage of Putin's response to such extreme conditions as war in Chechnya, terrorist attacks, forest fires in the summer of 2010, and the recent flooding in Krymsk created powerful demonstration effects that were important drivers of support for the government.

#### HYPOTHESES AND CONCEPTUAL FRAMEWORK

The conceptual framework for our analysis embraces the comparative statics of support for authorities in relation to the exposure to a disaster (losses) and the provision of aid (benefits). We derive our main hypotheses from two competing literatures on retrospective voting and refer

<sup>26</sup> Gandhi and Przeworski 2007.

<sup>27</sup> Riker 1980.

to these as “blind retrospection” and “voter gratitude.” We also build an alternative theoretical approach that emphasizes the demonstration effect from the governmental performance.

#### BLIND RETROSPECTION

Following Achen and Bartels,<sup>28</sup> one can predict that

—H1. Exposure to a natural disaster causes more negative attitudes toward the government.

The rationale behind this prediction is that people suffering from a disaster take out their frustration on the government. This logic is supported by systematic evidence that irrelevant events, such as college sports games, affect evaluations of government performance.<sup>29</sup> The mechanisms that link natural disasters and formation of negative opinion about the government can be rational, based on the evaluation of governmental performance in terms of disaster preparedness and actions on damage mitigation,<sup>30</sup> or it can be purely emotional, based on the subconscious perceptions of personal well-being.<sup>31</sup>

The literature on blame attribution<sup>32</sup> specifies the prediction by incorporating the mediating factor into the causal chain. It states:

—H1a. Exposure to a natural disaster leads people to blame the government and thus to develop negative attitudes toward it.

The literature also distinguishes between two types of blame: blame for causing a problem and blame for failing to treat or rectify it. In our study we test the impact of both types, asking about the blame of the government for the occurrence of the fires and asking for an evaluation of the relief and reconstruction programs.

#### VOTER GRATITUDE

The opposite prediction, derived from the literature on the effects of redistributive government policies, states that

—H2. Exposure to the natural disaster increases support for authorities due to the provision of aid.

The logic underlying this prediction is that the perceived ability of authorities to provide desirable and fair outcomes is an important

<sup>28</sup> Achen and Bartels 2004.

<sup>29</sup> Healy, Malhotra, and Mo 2010.

<sup>30</sup> Cole, Healy, and Werker 2012.

<sup>31</sup> Healy, Malhotra, and Mo 2010.

<sup>32</sup> Iyengar 1989; Iyengar 1991; Javeline 2003a; Javeline 2003b; Healy and Malhotra 2009.

determinant of political support.<sup>33</sup> Empirical evidence also consistently shows that voters do indeed reward incumbents for effectively delivering disaster relief.<sup>34</sup> Bechtel and Hainmueller<sup>35</sup> called this effect “voter gratitude” and showed that it is persistent over time. In general, this logic takes self-interest as the crucial determinant of attitude formation.

Specification of the hypothesis on voter gratitude in the context of our study implies that

- H2a. Exposure to the aid increases support for the government.
- H2b. Satisfaction with the aid provision increases support for the government.

The blind retrospection and voter gratitude approaches have the opposite predictions on the political effect of natural disasters, the result of different assumptions about voters’ level of sophistication, self-interest, and rationality. Both approaches, however, miss the important set of factors that we refer to as “demonstration effect.”

#### DEMONSTRATION EFFECT

Existing literature on the political effects of external shocks on support for the government focuses mostly on the role of perceived material losses and benefits, leaving aside the important factor of learning about governmental performance under extraordinary conditions.<sup>36</sup> The quality of the state response in the form of relief programs and the provision of aid can be perceived as a signal of the government’s competence,<sup>37</sup> even if one does not directly benefit from them. Thus, awareness of the effectiveness and fairness of the distribution of aid might significantly increase support for the authorities. The effect can be driven by direct observation and/or communication, for instance, via mass media. Moreover, natural disasters create space for the expression of symbolic power, since the relief measures can be presented as an opportunity for the “strong leader” to take care of his or her population. In addition, direct exposure to governmental action might change the perception of those citizens who have had little contact with the state. Based on this intuition, we form an empirical prediction that

- H3. Observation of governmental action of relief provision increases support for the government.

<sup>33</sup> Rogowski 1974.

<sup>34</sup> Healy and Malhotra 2009; Chen 2012; Cole, Healy, and Werker 2012.

<sup>35</sup> Bechtel and Hainmueller 2012.

<sup>36</sup> Gasper and Reeves 2011.

<sup>37</sup> Drazen 2000.

And it is important to note that our prediction should also work for people who did not suffer losses from the disaster and did not receive the aid but who were able to observe the government's performance.

Finally, it is noteworthy that in the research on attitudes, null results can be attributed not only to the absence of a statistically significant relationship but also to the presence of ambivalence, that is, simultaneous possession of positive and negative attitudes toward an entity.

#### SOCIAL CONTEXT

The wildfires in 2010 were the most disastrous in recorded history in Russia. The fires burned more than half a million hectares of land. More than fifty people died and more than twelve hundred houses were destroyed. President Dmitry Medvedev declared a state of emergency in seven regions and Prime Minister Vladimir Putin personally participated in the fire-fighting operations. Having started due to the abnormally hot weather, the fire rapidly spread over a large area, destroying everything in its path. Many observers criticized the government for its inefficient response to the disaster. In addition, people blamed the government for the elimination of the special agency that had been responsible for the prevention of forest fires. However, the critique of the government was discussed primarily via the Internet, which is still a rare medium of communication in rural Russia, where citizens commonly rely on television. Thus, on state-controlled television, the leaders of the state were presented as the principal figures fighting the fires, and all blame for inefficient performance was attributed to local and regional government officials. As a result, 77 percent of our respondents stated that the primary cause of the fires was the hot weather and about half (51 percent) agreed that another key cause was the failure of the government.

After the fires were extinguished, the federal government organized the large-scale provision of aid to the affected population and began reconstruction work in the burned villages. In a short period of time the government built new houses for all villagers who had lost their homes. In addition, burned villages received public goods such as new roads and gas infrastructure. All families, irrespective of the value of the lost property, received compensation in the form of new houses. All in all, about 70 percent of our respondents said that they were more or less satisfied with the reconstruction process, which was under the direct control of the prime minister. Putin also visited two burned villages during the reconstruction period and met with their inhabitants. These

visits were widely broadcast by the mass media.<sup>38</sup> In addition, Putin publicly criticized regional and local-level authorities and forced the resignation of the heads of the villages most severely affected, thereby shifting the blame to local authorities and presenting the national government as the savior.<sup>39</sup>

The wildfires of 2010 have already attracted scholarly attention. Andre Schultz and Alexander Libman<sup>40</sup> used them as an exogenous shock to test the idea of a local knowledge advantage for governmental performance. And David Szakonyi explored the effect of a district's proximity to fires on voting results for the ruling United Russia Party in the regional elections that were held in October 2010, just two months after the disaster.<sup>41</sup> He found that the party's electoral results in areas closer to the fires were lower than the average. Based on this result, he claimed that voters punished United Russia for the disaster. Moreover, the author also found evidence for the government's responsiveness; anticipating public anger, United Russia altered its electoral strategy and put forth nonincumbent candidates with less legislative experience, which was interpreted by the author as a sign of accountability. However, Szakonyi's study uses aggregate district-level data and a rough measure of the presence of fires taken from satellite imagery instead of direct measures of the impact of the disaster. He also does not explore the direct effects of the fires, since his sample contains only regions that were marginally affected by the disaster.

We focus instead on the firsthand evidence obtained by surveying the subjects who either suffered directly from the fires or live in proximity to the affected areas. Our research was conducted in the four most severely affected regions of Russia: Nizhny Novgorod, Ryazan, Lipetsk, and Voronezh oblast (see the map in Figure 1). All of them are situated in close proximity to Moscow. The regions are characterized

<sup>38</sup> Rbc.ru, 10.08.2010. At <http://top.rbc.ru/special/fires/10/08/2010/448378.shtml>. Media images of Vladimir Putin became more authoritarian in style, more paternalistic, and more masculine during the fire fighting. His new style of government included direct patronage of people, blaming local authorities for the incompetence, and distancing himself from the less popular president, Medvedev, who observed the aid provision from the vantage of his office. Putin's separation from the incompetent formal authorities emphasized the external source of his legitimacy—by his merits and devotion to the nation, not by virtue of an official position. Media coverage of Putin's role in the recovery process was exclusively positive. During the fire-fighting campaign (July 25–August 15, 2010) the biggest national broadcasters (Chanel 1, Russia, and NTV) devoted every tenth plot in prime time to Putin's leading role in fire-fighting operations (according to the Medialogiya database).

<sup>39</sup> Putin compelled local authorities to resign. Lenta.ru, 30.07.2010. At <http://lenta.ru/news/2010/07/30/fires1/>. "As Russia Wildfires Rage, Putin Shows Strength, Medvedev Tweets." *Christian Science Monitor*, August 3, 2010. At <http://www.csmonitor.com/World/Europe/2010/0803/As-Russia-wildfires-rage-Putin-shows-strength-Medvedev-tweets>.

<sup>40</sup> Shultz and Libman 2011.

<sup>41</sup> Szakonyi 2011.

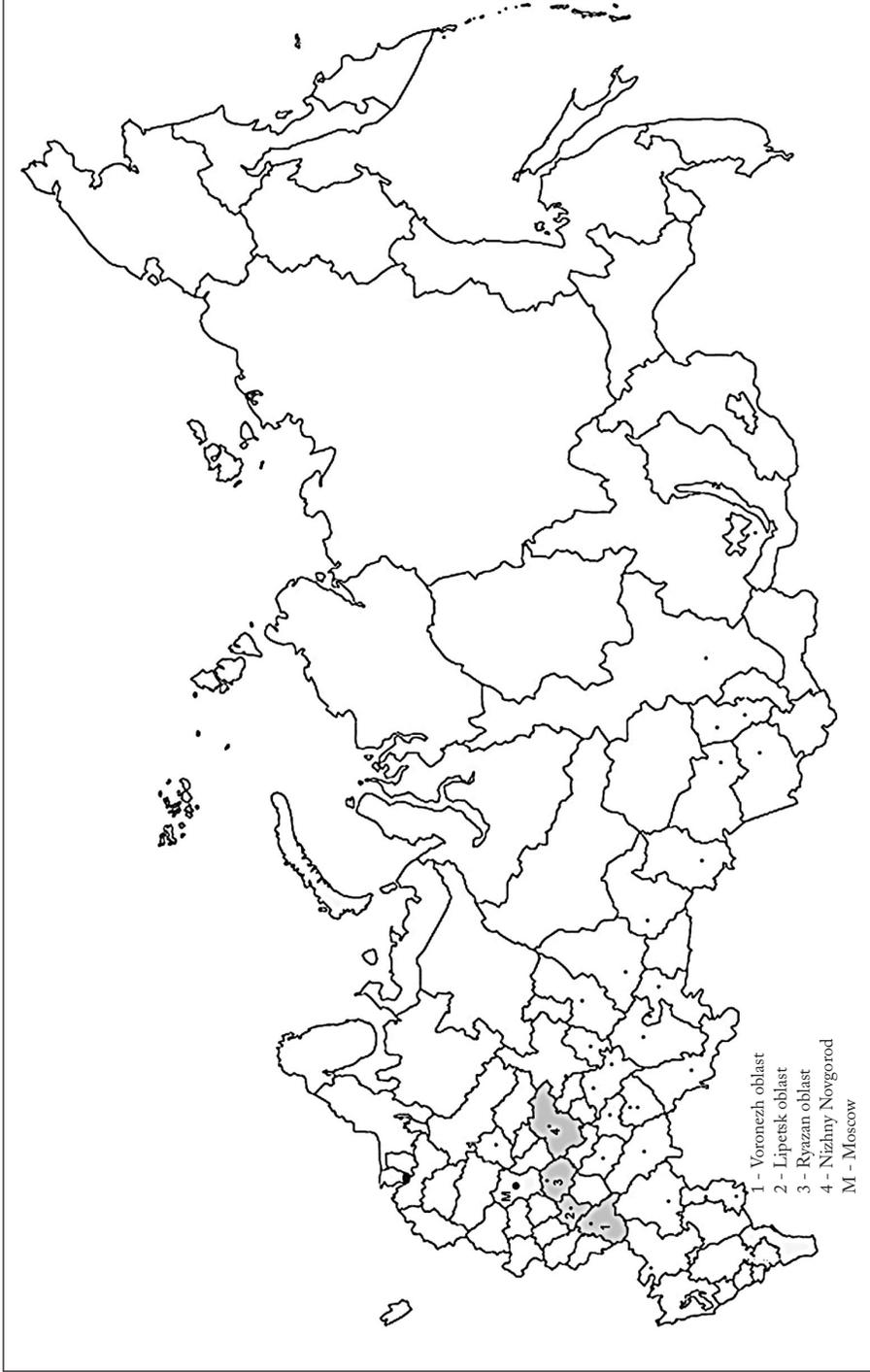


FIGURE 1  
SAMPLE REGIONS ON THE MAP OF RUSSIA

by the intermediate levels of gross regional product (GRP) per capita<sup>42</sup> and slightly below average electoral support for the regime's candidate and party.<sup>43</sup> Regional capitals are big cities with a developed industrial center, though much of the territory is rural. Despite the varying quality of life in the regional capitals, standards of living in rural areas within the four regions are relatively similar.<sup>44</sup> Rural areas were especially hard hit by the forest fires; therefore we concentrate our research on them.

Our theoretical predictions are therefore tested against very specific empirical material. Contemporary rural Russia is almost absent from social science research. However, as a mixture of traditionalism, the ruins of communism, and emergent modern capitalist relations, rural Russia presents an interesting setting for testing explanatory models of different social phenomena.<sup>45</sup> In political terms the Russian village is considered to be conservative. In the 1990s the rural population supported the communists, but in the 2000s they switched their allegiance to Putin and his party, United Russia. Moreover, along with national republics, the rural areas became the stronghold of Putin's regime. Therefore, analysis of the effect of exogenous shock on support for authorities in this context is especially important.

#### RESEARCH DESIGN

Our empirical strategy is built on the natural experiment that occurred due to a quasi-random variation in the exposure of villages in central Russia to the wildfires. Since wildfires spread with the direction of the wind, the local path of the fire is effectively random: one village may be burned while the neighboring village is left unscathed. Moreover, Schultz and Libman,<sup>46</sup> who also examined this variation, showed statistically that the prevalence of forest fires of 2010 was indeed random and uncorrelated with the past experience of forest fires in Russia. The comparison of means and statistical tests described later in the text shows that there are no significant differences between the prefire characteristics

<sup>42</sup> GRP per capita in US dollars (converted by PPP) in 2009 in Ryazan region was 7,225 (52 position out of 83 regions); in Voronezh region 7,289 (50/83); in Nizhny Novgorod 8,945 (35/83); and in Lipetsk region 10,653 (22/83). At [http://www.gks.ru/free\\_doc/new\\_site/vvp/dusha98-09.xls](http://www.gks.ru/free_doc/new_site/vvp/dusha98-09.xls).

<sup>43</sup> The total vote share of the United Russia Party in the 2007 parliamentary elections was 64.3, while in Voronezh region it was 57.46; in Lipetsk region 62.3; in Nizhny Novgorod region 60.63; and 57.1 in Ryazan region. The total vote share of Medvedev in the 2008 presidential elections was 70.28, while in Voronezh region it was 66.27; in Lipetsk region 66.84; in Nizhny Novgorod region 61.86; and 60.82 in Ryazan region.

<sup>44</sup> Zubarevich N. "Four Russias: Rethinking the Post-Soviet Map." March 29, 2012. At <http://www.opendemocracy.net/od-russia/natalia-zubarevich/four-russias-rethinking-post-soviet-map>.

<sup>45</sup> O'Brien and Wegren 2002.

<sup>46</sup> Schultz and Libman 2011.

of the burned and unburned villages, and that is consistent with our assumption that our study works with the experimental framework.

Our study is not a perfectly controlled experiment, however. Rather, it relies on naturally occurring experimental conditions that could potentially contain serious methodological problems.<sup>47</sup> In particular, we face three methodological challenges. First, the most important problem is that we have two sources of exogenous variation: exposure to the wildfires and the governmental aid to the burned villages. Although it violates the requirement of excludability of the treatment effect, this setting allows us to test both factors—losses from disaster and gains from the relief measures. In our empirical analysis we try to isolate these effects by looking at mediating outcomes.

Second, another fundamental requirement for experimental research, SUTVA (stable unit treatment value assumption), generally refers to the noninterference between treatment and control groups. In our case this assumption may be vulnerable to a spillover effect. In other words, exposure to the treatment group of one unit may affect a neighboring one. We can claim with certainty that people from the villages affected by fires did not move to the villages from our control group and vice versa. Nevertheless, in the context of natural disaster, spillovers may also occur from externalities of damage or aid distribution, in which neighboring villagers are envious of affected villagers who have received compensation and new houses, or through communication between villagers and observation of the reconstruction process. We address the problem of spillovers in our empirical analysis.

Third, the internal validity of our study may be weakened by the attrition problem, that is, the nonrandom loss of observations. The problem arises because some people from burned villages left after the fires, so comparison between the treatment group and the control group may be compromised. We solve this problem in part by surveying one of the resettled villages. However, people who left the rural area and received aid in the form of apartments in cities are not represented in our study.<sup>48</sup>

We built our sample through blocked randomization. The treatment group (burned villages) comprised thirty-four villages from the total sample of forty-three villages from the four most severely affected regions of Russia: Nizhny Novgorod, Ryazan, Lipetsk, and Voronezh oblast. Villages that are not represented in the study are either too small or belong to other administrative units. The control group comprised

<sup>47</sup> Sekhon and Titiunik 2012.

<sup>48</sup> The number of families that chose to take compensation in the form of apartments in the city is no more than 5 percent of the total number of the population of the villages in the treatment group.

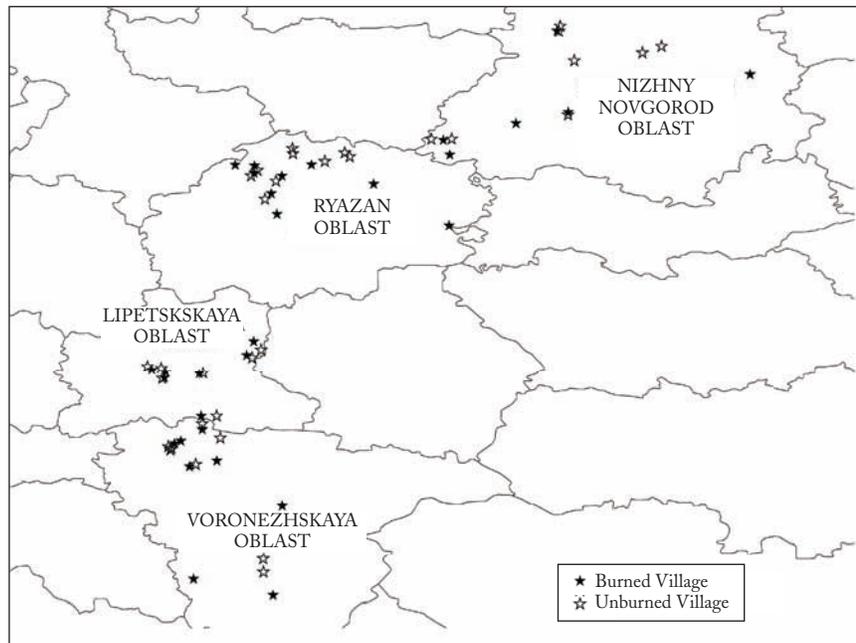


FIGURE 2  
GEOGRAPHICAL MAP OF THE SAMPLE

thirty-six randomly selected villages from the pool of 160. The geographical map of the sample is drawn in Figure 2.

The randomization was blocked by region, population size, and distance from the regional capital and municipal center. In every village we surveyed between ten and sixteen people.<sup>49</sup> In the burned villages we surveyed both those households that suffered from the fires and those that did not in almost equal proportion (50.7 percent of our respondents lost all their property in fires and 41.1 percent of them were not affected at all).

The authors and their research assistants conducted the surveys in July and August 2011, that is, exactly one year after the fires. Our survey included various questions on trust, participation in local governance, events related to the fires and fire damage, political awareness (knowledge

<sup>49</sup> Respondents were selected through the procedure of a random walk targeting every fifth household on one side of the predetermined street. We also used a quota method to obtain the variance in gender, age, income, and exposure to the fires and reconstruction. In the small villages (population less than one hundred residents), we relied on the convenient sample. In any case, we do not claim that our samples of ten to sixteen people are representative of the villages; for the purposes of this study, that is not necessary.

of the names of politicians), satisfaction with different levels of government, and individual information. The survey consisted of thirty-five questions. The response rate was above 90 percent. In the vast majority of the cases people readily agreed to participate in the survey and openly expressed their views. However, considering the sensitivity of the questions on support for authorities under a nondemocratic regime, we admit the possibility of social desirability bias in our survey. But there is no reason to believe that people from the burned and unburned villages differed in their sincerity, since the populations in the burned villages had already received their compensations and there was no way the authorities could rescind these benefits.

#### VARIABLES AND DATA

The dependent variables of the study are drawn from the answers to the survey questions that evaluate a respondent's satisfaction with the work of the governmental bodies, namely, the head of the village,<sup>50</sup> the governor, the prime minister (Putin), and the president (Medvedev). The answers to these questions are based on the Likert scale and include such positions as 1, fully dissatisfied; 2, more dissatisfied than satisfied; 3, more satisfied than dissatisfied; and 4, fully satisfied. The questions also include a response for those who found it difficult to answer. Another outcome of interest, political preferences, is measured by the responses to the question, "What party are you going to vote for in December?"<sup>51</sup> We coded this variable as a dummy that receives a value of 1 if a respondent names "United Russia" as his or her choice and 0 otherwise. We justify this choice by the nature of Russian politics and the 2011 Duma campaign in particular, during which all political forces were more or less clearly divided into two camps: for United Russia and against.<sup>52</sup>

The main independent variable showing exposure to treatment is coded as a dummy variable where a value of 1 means the village was burned and a value of 0 if the village was unaffected. A village is considered

<sup>50</sup> Head of the rural settlement is an executive office within the system of municipal government. Legally, this office is not a part of the executive branch of power in Russia (Federal Law No. 131), though often it is informally integrated within the government. Moreover, according to our field observations, most rural dwellers perceive their village heads as representatives of the government. Thus, we study how people assess performance of the heads together with other levels of the executive branch of power.

<sup>51</sup> The December 4, 2011, elections to the Russian State Duma.

<sup>52</sup> Reuter 2011.

to be burned if there was at least one burned house. The data that we used for this variable come from the Russian Ministry of Regional Development.

To specify the treatment effect, we used several additional variables. First, we included the measure of household victimization from the fires, coding it as dummy variable that received a value of 1 if a family lost property in the fire and 0 if not. Second, we include in the analysis the number of reconstructed houses per capita as a proxy for the level of governmental aid. This proxy is rough, but since money to the affected villages was provided proportionally to the number of houses, the latter is a reasonable measure. We also constructed two dummy variables on blaming the authorities for the fires and satisfaction with the relief measures from the answers to the questions of the survey. To capture the potential demonstration effect, we first created a dummy variable that contrasts the people from the burned villages who did not lose their property during the disaster and therefore did not get any direct material aid (assigned the value 1) with the population of unaffected areas (assigned the value 0). In addition, we calculated a variable based on the distance to the closest burned village for all units that constitute the control group. This measure is used to analyze the spillover effects of the fires. Finally, to estimate another aspect of the demonstration effect—symbolic power manifestation—we coded Putin's visits to two burned villages, Verhn'aja Vereja (Nizniy Novgorod region) and Peredel'cy (Ryazan region), in September of 2010.

The analysis includes a set of covariates that were used as controls. They were drawn from both the village and the individual levels. The variables at the village level include population size, distance from the regional capital, distance from the municipal center, municipal revenues, and expenditures from 2009—the year prior to the fires. The data for these variables come from the municipal statistics of the Russian Federation Federal State Statistics Service (ROSSTAT). We also use proxy variables of prior support for authorities that are presented in the form of vote shares of the United Russia Party on parliamentary elections in 2007 and share of votes for Medvedev on presidential elections in 2008. As these measures are not available on the village level, we instead take the results from the lowest available level—electoral precincts—and match them with our units of analysis.

The variables at the individual level are measured primarily from the responses to the survey and include residence status (permanent/temporary seasonal residence), gender, age, level of education, and occupational status. We also measure the indicators of communication

facilities by asking the respondents about the availability and use of radio, television, telephone, and the Internet in their households. In addition, we test the variables on the political awareness of the respondents, that is, their knowledge of who occupied political office at the time of the study, which may have had a crucial impact on the political attitudes toward the institutions that were represented by these people. These variables are based on simple binary opposition: 1, the right answer to a question about the identity of an elected official, and 0, the wrong answer. These answers are then integrated into the index of political awareness. Finally, we created dummy variables to examine the regional fixed effects for all four regions presented in the study.

#### EMPIRICAL ANALYSIS

The first part of the empirical analysis checks the extent to which the treatment is effectively randomized. For this purpose we compare means of the key observable characteristics on the village and individual levels between burned and unburned villages and perform the F-test, which basically shows the equality of variances. The results of these tests are presented in Table 1 for village-level variables and in Table 2 for individual-level variables.

The results confirm that the assignment to treatment and control groups bears no systematic relationship to the observables. There are no differences on average between the burned and unburned villages in population size, territory, distance from the regional capitals and municipal centers, revenues, expenditures, and voting for the government-backed United Russia Party for State Duma in 2007 and Medvedev for president in 2008, and there are no differences between their inhabitants in age, gender, residence status, education, occupation, and access to communications.

After the confirmation of the reliability of our basic methodological assumption, we turned to testing the hypotheses. The logic behind this process is very simple—we regress our dependent variables on the independent variable and in this way obtain an average treatment effect. Since our unit of analysis is individual and randomization was provided on the village level, we use robust clustered standard errors.

Table 3 in the supplementary material presents the results of the regressions analysis of the models of support for authorities that include only the dependent variable and predictor, that is, the exposure to treatment effect.<sup>53</sup> We ran logistic regression for support for the United

<sup>53</sup> Lazarev et al. 2014.

TABLE 1  
BALANCE CHECK ON THE VILLAGE-LEVEL COVARIATES

	<i>Fire</i>		<i>Difference</i>	<i>F-statistics</i>
	<i>No (N = 36)</i>	<i>Yes (N = 34)</i>		
Population	664	585	79	0.71
Territory	15240	18494	-3254	0.47
Distance from the Regional Capital	58	63	-5.3	0.65
Distance from the Municipal Center	18.9	18.3	0.6	0.81
Revenues	5.79	5.8	-0.084	0.9
Expenditures	5.91	5.8	0.032	0.92
United Russia Party's Share of Voters 2007	67.6	69.9	-2.22	0.47
President Medvedev's Share of Votes 2008	69.4	68.8	0.67	0.80

TABLE 2  
BALANCE CHECK ON THE INDIVIDUAL-LEVEL COVARIATES

	<i>Fire</i>		<i>Difference</i>	<i>F-statistics</i>
	<i>No (N = 394)</i>	<i>Yes (N = 375)</i>		
Residence	0.19	0.18	0.01	0.28
Sex	0.39	0.4	-0.01	0.57
Age	53	55	-2	0.95
Education	2.74	2.71	0.03	0.82
Occupation	0.43	0.36	0.07	0.51
Radio	0.38	0.39	-0.01	0.58
TV	0.93	0.91	0.02	0.22
Internet	0.3	0.29	0.01	0.35
Phone	0.91	0.95	-0.04	0.93

Russia Party, which is coded as a binomial variable, and ordered logistic regression for the ordinal outcomes on support for the governmental bodies.

The results show that exposure to the fire is associated with higher levels of support for all levels of government and for the United Russia Party; in other words, the population of villages experiencing the natural disaster and provision of relief in its aftermath have a higher level of approval of authorities than the population in the unaffected areas. In our case, this is particularly interesting, since half of our respondents pointed out that the government was actually responsible for the disaster.

To convey numerically precise estimates of the power of the treatment effect, we used the special technique of Monte Carlo simulations, developed by Gary King, Michael Tomz, and Jason Wittenberg.<sup>54</sup> It allows us to convert the raw outputs of our logistic regressions into predicted probabilities of support for authorities. To conduct the simulation, we first transformed our dependent variables from ordinal to binomial form by combining the categories. We then calculated the first difference between expected values of support for authorities in burned and unburned villages using CLARIFY software.<sup>55</sup> The results of the simulations for all dependent variables are presented in Table 3S of the supplementary material.<sup>56</sup>

The results of the simulations show that exposure to the fire tends to increase support for United Russia by approximately 15 percentage points. For the village head, the increase in support is equal to 9 percentage points, but the level of uncertainty of the estimation is high (standard error = 0.06) and therefore this probability is invalid. For governors, the impact of fire increases the probability of support by 13 percentage points. Finally, the treatment effect raises support for Prime Minister Putin by approximately 19 percentage points and for President Medvedev by 22 percentage points. To illustrate the gaps in support for authorities between treatment and control groups we draw Figure 3.

Further, to test the sustainability of the effect, we run the models incorporating all controls both on the individual and on the village level, as well as regional fixed effects. These results are presented in Table 4 of the supplementary material: Tables 4A and 4B incorporate the additional controls on predisaster electoral results of the United Russia Party in the 2007 parliamentary elections and of Medvedev in the 2008 presidential elections.<sup>57</sup>

The results of the analysis of the regression models and simulations with covariate adjustment are consistent with the ones from the tests of the pure treatment effect—exposure to fire increases support for political authorities. Interestingly, predisaster electoral results seem to have pure predictive power. After the establishment of the treatment effect, we turn to the exploration of the causal path that leads from the treatment

<sup>54</sup> King, Tomz, and Wittenberg 2000.

<sup>55</sup> Tomz, Wittenberg, and King 2003.

<sup>56</sup> Lazarev et al. 2014.

<sup>57</sup> Lazarev et al. 2014. Electoral districts do not match perfectly with the villages, which are our units of observation; therefore in analyzing the models that include electoral results of the government, we restrict our sample to the villages in electoral districts that only contain burned or unburned villages. As a result our sample decreases by thirteen units.

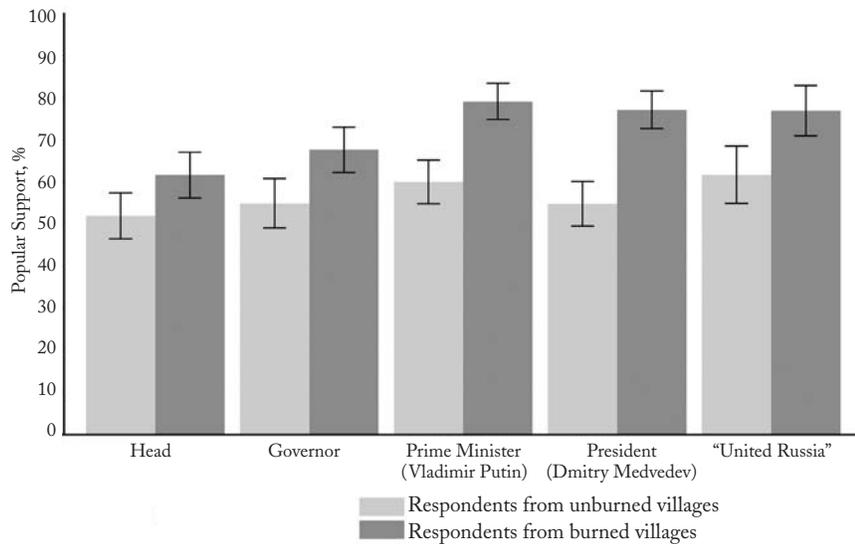


FIGURE 3  
POPULAR SUPPORT FOR THE AUTHORITIES IN UNBURNED AND BURNED VILLAGES

to the outcomes. In general, randomized experimentation is often presented as a “black box” approach to causal inference, because the researchers have no ability to see how exactly a treatment works.<sup>58</sup> Indeed, how does the exposure to wildfires lead to higher support for Putin and increase the willingness to vote for the United Russia Party? The most obvious explanation is that these political attitudes are the result of the generous governmental aid. But how can we test this explanation?

Many techniques try to ascertain the causal path between treatment and outcomes. Most of these techniques are based on regression analysis that includes different posttreatment or mediating variables. However, this approach is heavily criticized because it is based on restrictive assumptions.<sup>59</sup> The main problem is that the mediator is not randomly assigned and therefore could be systematically related to unmeasured causes of the outcome. Therefore, we cannot estimate the role of aid by including in the models a measure of subsidies or other relevant variables for public goods provision postfires, since they may be driven by some unobserved village characteristics.

Instead, to avoid the biases of the simple mediation analysis, we try to find causal paths by using treatment outcomes rather than the

<sup>58</sup> Gelman and Hill 2007.

<sup>59</sup> Gelman and Hill 2007; Gerber and Green 2012.

posttreatment covariates and thus preserve the experimental framework. First, to test the hypothesis on voter gratitude, we estimate the effect of the variable on the number of reconstructed houses per capita, which serves as a proxy for the magnitude of the disaster that ultimately determines the magnitude of aid. This approach helps to isolate the effect of the losses and the provision of aid.

The results of the tests of the magnitude of the aid provision show that it is a powerful predictor of support for the prime minister and the president: the higher the magnitude of the disaster and the more aid the village received, the higher the levels of support for Putin and Medvedev. However, the magnitude of aid cannot explain the levels of support for village heads, governors, and United Russia. Moreover, even in the models of support for Putin and Medvedev the variable on aid does not drive out the effect of the exposure to fire and works as a supplement for the main treatment effect. (See Table 5 in the supplementary material.)<sup>60</sup>

To test the hypothesis on the demonstration effect, we use a dummy variable that contrasts the people from the burned villages who did not lose their property during the disaster and therefore did not get any direct material aid with the population of unaffected areas. We basically exclude the populations whose houses were reconstructed and then regress our dependent variables on the new independent variable. Results of estimations, presented in Table 6 in the supplementary material show that people who directly observed the disaster and relief but did not receive any material aid have substantially higher support for the authorities.<sup>61</sup> Simulations reckon that the people who observed the disaster and relief are 9 percent more likely to vote for the United Russia Party (the effect is not statistically significant though: standard error = 0.07); and 11 percentage points more likely to approve the village head. For governors the impact of observing the disaster and relief increases the probability of support by 17 percentage points; for Prime Minister Putin by 22 percentage points; and for President Medvedev by 21 percentage points. These effects are large and substantively similar to the effect of the exposure to the disaster per se.

Next, to test the idea on the symbolic effect of governmental performance, we include in the analysis the variable on Putin's visit to the villages.<sup>62</sup> The effect was found to be a very strong explanatory variable

<sup>60</sup> Lazarev et al. 2014.

<sup>61</sup> Lazarev et al. 2014.

<sup>62</sup> We cannot claim that Putin selected the villages he visited randomly, though there is no statistical relationship between his choice and the electoral results of the progovernment candidate in the presidential election of 2008.

in the models of support for Putin himself (increase of popularity is about 15 percentage points), for President Medvedev (increase is about 15 percentage points), for village heads (increase is about 23 percentage points), and for governors (increase is 29 percentage points), but it was not strong for United Russia (see Tables 7 and 7S in the supplementary material).<sup>63</sup> What is more, the strength of the effect of the symbolic action is almost identical to the effect of the aid in the model of support for prime minister and much higher in the models of support for village heads, the president, and especially governors.

An additional test of the demonstration effect hypothesis is based on the analysis of spillovers. To do the analysis we restrict our sample for the unburned villages and estimate the effect of the distance to the closest burned village. We ran another set of regressions and simulations, the results of which are presented in Tables 8 and 8S in the supplementary material.<sup>64</sup> Estimation of the models of support for all levels of the government shows large positive spillovers: the level of support for the authorities in the villages that are far away from the burned areas is lower than in those that are situated in proximity to the fires. Specifically, the probability of support for Putin and Medvedev decreases by 9 percentage points and 6 percentage points respectively in the villages that are twenty-five kilometers from the fires as compared with those that are one kilometer away; and regarding support for the governors and the United Russia Party, the effect is even larger—approximately 14 percentage points and 15 percentage points. Sensitivity analysis with the different thresholds on the distance measures (five, ten, and twenty-five kilometers) confirms the results.

The final stage of our empirical analysis explores how political support for authorities varies within the burned villages. To do this, we run the models, which include the variables on household victimization, blaming the authorities for disaster, and satisfaction with the relief measures.<sup>65</sup> The outcomes of estimations are presented in Tables 9, 10, and 11 in the supplementary material.<sup>66</sup>

The analysis of the factors of political support within the burned villages also provides some interesting results. The most striking finding is that the variable on blaming the authorities for the disaster is

<sup>63</sup> Lazarev et al. 2014.

<sup>64</sup> The results of the full model's estimation are presented in Table 5 in the supplementary material; Lazarev et al. 2014.

<sup>65</sup> All three variables are uncorrelated. Spearman's rho for satisfaction and victimization is 0.05 (Prob > t = 0.33); for blaming authorities and satisfaction Spearman's rho = -0.18 (Prob > t = 0.01); for victimization and blaming authorities Spearman's rho = 0.07 (Prob > t = 0.14).

<sup>66</sup> The results of the full model's estimation are presented in Table 5; Lazarev et al. 2014.

significant only for the prediction of support for village head. Blaming other levels of the government does not negatively affect approval of them. By contrast, satisfaction with the relief measure is a very strong predictor of support for all governmental bodies. Finally, the results of the test on the effect of household victimization show that people who suffered from the disaster tend to be highly supportive for the United Russia Party, the prime minister, and the president, but the difference in support for local and regional authorities between people who directly suffered from the fires and their covillagers is statistically negligible.

#### INTERPRETATION OF THE RESULTS

Our empirical analysis has yielded several principal findings. First, we established that exposure to natural disaster and governmental relief in its aftermath is associated with higher levels of support for the authorities and the party of power in rural Russia. Importantly, since we do not have information on the level of government approval ratings prior to the summer of 2011, we are unable to state with certainty whether the support for authorities increased in the burned villages or dropped in the unaffected ones. One way to address this problem is to calibrate our indicators of support for authorities with a benchmark. For instance, we can compare our indicators of support for authorities with the electoral results. The average vote share of the United Russia Party in parliamentary elections for our four regions, excluding regional capitals, was 65.98 percent in 2007 and 54.18 percent in 2011, while our survey indicates support for the party by 76.80 percent of the respondents in the burned areas and 61.62 percent in the unburned ones. An alternative potential benchmark can be found in all-Russian survey data. For us the most relevant comparison is aggregate indicators of support for authorities in rural Russia provided by the Levada-Center.<sup>67</sup> In June 2010—just before the fires struck—the average approval rating of President Medvedev was 76.4 percent. And it was 63.5 percent in August 2011—the time when we conducted our survey—while our data show support of 77.04 percent in the burned areas and 54.7 percent in the unburned. It is plausible to infer from this evidence that support for authorities remained the same or increased in the burned areas as compared with the prefire level. At the same time governmental support in the unburned areas seems to follow the general all-Russia trend and decline.<sup>68</sup> Due to the timing of our survey, we are unable to examine

<sup>67</sup> Monitoring socialno-ekonomicheskikh peremen. Levada-Center.

<sup>68</sup> There is a clear trend of a decrease in approval ratings of the government from 2010 to 2011 that is unrelated to the fires.

the dynamics of support for authorities over time and detect whether in the burned areas it fell after the fires and rose after the aid distribution, or whether it increased immediately after the fires due to the dire need for governmental assistance. Therefore, rather than reject the “blind retrospection” hypothesis, we argue that other forces may have had a countervailing effect.

In particular, we found strong and robust evidence for the positive effect of the exposure to governmental aid and satisfaction from it on support for authorities. This evidence gives support to the “voter gratitude” model, but as we show, it is an insufficient explanation. Variables for the number of reconstructed houses per capita and household victimization, which were used as proxies for village and individual material gains from disaster relief, are strong and significant predictors of the higher support for authorities in the burned villages, but they do not account for the entire effect of the natural disaster. Furthermore, our analysis demonstrates that people in the burned villages who did not lose their property and therefore did not receive any direct material aid also experienced substantially higher levels of support for the government than people in the unaffected areas. In addition, we found large positive effects for Putin’s visit to the villages during the reconstruction processes and a strong positive spillover effect among the villages in close proximity to the burned areas.<sup>69</sup> Thus, we argue that the loyalty of residents was not just “bought” by the government but, rather, that their support involved other factors. We interpret these results as evidence supporting the demonstration effect hypothesis.

The increase in the positive attitudes toward the government can also be attributed to the direct experience of dealing with authorities. Before the fires occurred, residents of the villages saw government officials only on television, but after the fires they received enormous amounts of attention from the government. The results of the test on the effect of Putin’s visit to two villages support this idea. According to the numbers, not only did these purely symbolic acts increase support for Putin himself, but they also substantially increased the popularity of the village heads and the governors who joined Putin in his visits. It is plausible that the villagers were impressed to see their local leaders in the company of the most powerful politician in the country, and this impression enhanced the symbolic power of village heads and governors.

Finally, the effect of the natural disaster and distribution of aid may be conditional on political institutions. It was highlighted in the literature

<sup>69</sup> We do not have systematic evidence about the intensity of intervillage communication, but our field observations suggest that people from the villages situated close to each other did visit their neighbors and could therefore learn about government performance in the nearby villages.

that democracy facilitates specific blame attribution through competitive elections that create a “purposely informative political environment.”<sup>70</sup> By contrast, in the absence of democratic mechanisms based upon political competition, the question of who is to be blamed does not receive the level of attention that is required to direct negative attitudes toward the incumbent government.

#### CONCLUSION

“Who is to be blamed?” and “what is to be done?” are two perennial Russian questions. The population of the villages burned by the wildfires in the summer of 2010 had to answer both of them. The disaster thereby created a unique opportunity to study blame attribution and attitudinal change in out-of-equilibrium circumstances.

Our study conducted in the areas affected by the disaster over the course of the summer of 2011, exactly one year after the fires, found that villages that suffered from the fires have higher levels of support for the authorities than unburned ones. Although to a great extent increase in support for the government can be explained by the massive aid, we also found unexpectedly high levels of governmental approval among people from the burned villages who did not lose their property and therefore did not receive compensation, as well as among people from the areas unaffected by the disaster but situated in close proximity to the burned villages. We interpreted these findings by demonstration effect—the impact of signaling on government presence and competence. A good illustration of this logic can be found in another passage of the journalistic article cited in the introduction: “Putin’s political survival skills are formidable, and writing his political obituary would be premature. More than anyone in the top leadership, he has been meeting with affected families and directing emergency operations. He even co-piloted a firefighting plane in the Ryazan region, site of some of the worst fires.”<sup>71</sup>

This article shows that active government performance, in addition to generous aid, increases loyalty to the authorities among people directly affected by the disaster, as well as among those who could observe governmental performance. This is especially striking, given that many people did blame the government for the occurrence of the disaster. Thus, our study draws attention to the need to consider the government’s response and the passage of time in order to resolve the difference

<sup>70</sup> Javeline 2003b, 109.

<sup>71</sup> Shevtsova and Kremer 2010.

in findings between the blind retrospection and voter gratitude literatures. In other words, in situations where governments have the time and ability to respond to disasters with effective relief, blame no longer translates into constituent vengeance.

One question that arises naturally from our study is whether the patterns established in it are artifacts of a peculiar Russian political culture. In other words, how well does the argument travel beyond Russia's borders? We believe that the results can travel well. In fact, our results on the positive effect of exposure to a natural disaster and governmental aid on support for authorities are in line with the findings of the study of the effect of the 2002 Elba flooding in Germany, as well as of several other studies conducted in democratic countries, although those do not differentiate between the different mechanisms behind the voting patterns. We think that the most direct evidence in support of our logic can be found in the recent study of the effects of the 2010 and 2011 floods in Pakistan:<sup>72</sup> the study shows that areas exposed to the disaster and the relief had higher level of electoral support for the incumbent party in the 2013 elections. Most importantly, the authors claim that they found no evidence that this result is driven by the patronage goods distributed to the flood-affected areas. Therefore the demonstration effect of governmental performance in the case of Pakistan might be as important as in our study.

Another relevant question one may ask is whether natural disasters lead to similar outcomes in other authoritarian regimes? We believe that the answer is no, due to the important differences between authoritarian regimes. In Russia, where the regime is a hybrid of dictatorship and democracy<sup>73</sup> and the government partly relies on popular support for political leadership, when a shock occurs, authorities actively respond in order to mitigate potential negative effects and even possibly to exploit the shock in a "rally 'round the flag" manner. In contrast, regimes that do not rely on popular support have no incentive to invest in countervailing measures. That is why, perhaps, when Cyclone Nargis struck Burma in 2008, the military junta made no effort to evacuate the people.<sup>74</sup> Nevertheless, in the contemporary world there are few purely despotic countries, whereas there are a number of hybrid regimes. Therefore, we believe that our study opens an important comparative perspective for understanding the microfoundations of sustainability and performance of authoritarian governments.

<sup>72</sup> Fair et al. 2013.

<sup>73</sup> Levitsky and Way 2010.

<sup>74</sup> For an alternative explanation, see Quiroz Flores and Smith 2013.

## SUPPLEMENTARY MATERIAL

Supplementary material for this article can be found at <http://dx.doi.org/10.1017/S0043887114000215>.

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