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Resisting Lockdown: The Influence of COVID-19 Restrictions on Social Unrest

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Responding to the COVID-19 pandemic has created unprecedented social and political challenges. Mitigation strategies often disrupt the daily lives of citizens and constrain rights and privileges. Policies intended to contain disease spread have provoked resentment, resistance, and backlash. We examine the extent to which specific COVID-19 policy responses influence the frequency of civil unrest. Combining insights from both grievance and opportunity models of dissent, we contend that pandemic-response policies are most likely to lead to unrest when the grievances and opportunities created by disease-mitigation strategies reinforce each other. We test our arguments with nuanced information on specific pandemic-mitigation policies, combined with geolocated events data on COVID-19-related social unrest activities. We find that policies such as workplace and school closures, which induce intense grievances and reduce the opportunity cost of engaging in collective mobilization, are associated with increases in dissent activities. Policies that restrict opportunities for mobilization, such as restrictions on public transportation, reduce the number of dissent activities. Notably, economic support policies attenuate the effects of workplace closures on dissent. Our results illustrate the varying effects of pandemic-mitigation policies on unrest depending on how the grievances they inspire relate to the opportunity they create.

La respuesta a la pandemia de COVID-19 ha creado desafíos sociales y políticos sin precedentes. Las estrategias de mitigación suelen alterar la vida cotidiana de los ciudadanos y limitan los derechos y privilegios. Las políticas destinadas a contener la propagación de la enfermedad han provocado resentimiento, resistencia y respuestas negativas. Examinamos en qué medida las respuestas políticas específicas ante el COVID-19 influyen en la frecuencia de los disturbios civiles. Combinando las ideas de los modelos de reclamos y de oportunidad de disidencia, sostenemos que las políticas de respuesta a la pandemia tienen más probabilidades de provocar disturbios cuando los agravios y las oportunidades creadas por las estrategias de mitigación de la enfermedad se refuerzan mutuamente. Ponemos a prueba nuestros argumentos con información detallada sobre políticas específicas de mitigación de la pandemia, combinada con datos de eventos geolocalizados sobre las actividades de malestar social relacionadas con el COVID-19. Encontramos que políticas como el cierre de centros de trabajo y de escuelas, que inducen a intensos agravios y reducen el costo de oportunidad de participar en la movilización colectiva, están asociadas con el aumento de las actividades de disidencia. Las políticas que restringen las oportunidades de movilización, como las restricciones al transporte público, reducen el número de actividades de disidencia. En particular, las políticas de apoyo económico debilitan los efectos del cierre de centros de trabajo sobre la disidencia. Nuestros resultados ilustran los diferentes efectos de las políticas de mitigación de la pandemia sobre el malestar, según la relación entre los agravios que inspiran y la oportunidad que crean.

Répondre à la pandémie de COVID-19 a créé des défis sociaux et politiques sans précédent. Les stratégies d'atténuation ont souvent perturbé la vie quotidienne des citoyens et limité leurs droits et privilèges. Les politiques visant à endiguer la propagation de la maladie ont provoqué un ressentiment, de la résistance et des réactions négatives. Nous examinons la mesure dans laquelle des réponses politiques spécifiques à la COVID-19 ont influencé la fréquence des troubles civils. Nous allions des renseignements issus de modèles de dissidence basés à la fois sur les griefs et les opportunités et nous soutenons que les politiques de réponse aux pandémies sont davantage susceptibles de provoquer des troubles lorsque les griefs et les opportunités créés par les stratégies d'atténuation de la maladie se renforcent mutuellement. Nous mettons nos arguments à l'épreuve à l'aide d'informations nuancées sur des politiques spécifiques d'atténuation de la pandémie, combinées à des données d'événements géolocalisés sur les troubles sociaux liés à la COVID-19. Nous constatons que les politiques telles que les

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fermetures des lieux de travail et des écoles, qui suscitent des griefs intenses et réduisent le coût d'opportunité de s'impliquer dans une mobilisation collective, sont associées à des augmentations des activités de dissidence. Les politiques qui limitent les opportunités de mobilisation, telles que les restrictions affectant les transports publics, réduisent le nombre d'activités de dissidence. Et par-dessus tout, les politiques de soutien économique atténuent les effets des fermetures de lieux de travail sur la dissidence. Nos résultats illustrent les effets variables des politiques d'atténuation des pandémies sur les troubles, selon le rapport entre les griefs qu'elles inspirent et les opportunités qu'elles créent.

Introduction

The COVID-19 pandemic represents the most significant global public health challenge since the 1918 H1N1 influenza pandemic.[1] Responding to the pandemic has also created enormous political challenges for governments across the globe. To many citizens, the mitigations strategies governments routinely adopted during the height of the pandemic, which included prohibitions on social gatherings, school and workplace closures, and restrictions on travel and movement, represent substantial restrictions on their rights and freedoms and, in some cases, threats to their material and psychological well-being. Citizens have responded to such restrictions with varying degrees of acceptance, resistance, and defiance. Indeed, emergency laws and regulations intended to mitigate the spread of COVID-19 have prompted social unrest in numerous countries, ranging from peaceful organized protests to riots and violent confrontations with police. In the United States, heavily armed protesters gathered at the Michigan State Capitol building in order to signal their opposition to the governors' lockdown order (Beckett 2020). In South Africa, police forcibly dispersed anti-lockdown protesters outside of Parliament (Associated Press 2020). In Israel, protests against a second national lockdown led to violent clashes between pro-government and anti-government demonstrators (Kershner 2020).

While these examples suggest a link between pandemic-related restrictions and social unrest, there is little systematic evidence demonstrating any such relationship. Moreover, scholars have yet to clearly identify and examine the mechanisms that potentially link the unanticipated imposition of such restrictions to the willingness and ability of individuals to mobilize against them. Herein, we therefore begin to address these empirical and theoretical gaps. Our theoretical argument integrates insights from both grievance and opportunity models of collective mobilization. We contend that pandemic-responses are most likely to lead to unrest when disease-mitigation policies simultaneously generate intense grievances and lower the costs of collective action among aggrieved individuals. Central to our argument is the recognition that pandemic-response policies vary in the extent to which they affect each of these dimensions, and thus the balance of a policy's effects ultimately determines its role in promoting or discouraging dissent. By explicitly considering how different policies influence both grievances and mobilization opportunities, as well as how those forces interact with one another, we are able to generate specific hypotheses about the influence of a given set of policies on the likelihood of social unrest.

We empirically evaluate these hypotheses using a cross-national dataset of COVID-19 pandemic-response policies (Hale et al. 2020) and geolocated events data on COVID-19-related social unrest activities (Raleigh et al. 2010). Our results broadly support our principal arguments and identify specific sets of pandemic-mitigation policies that promote or reduce the likelihood of unrest. Specifically, we find that the forced closure of schools and workplaces, restrictions on movement within domestic borders, international travel controls (such as border closures), and restrictions on public and private gatherings are positively correlated with increased social unrest. By contrast, restrictions on domestic public transportation are associated with decreased social unrest. Finally, we find that economic support policies condition the relationship between workplace closures and unrest. Taken as a whole, our results suggest that how governments respond to pandemics represents an important but previously overlooked driver of political and social unrest.

This article makes several contributions to the interrelated research agendas devoted to understanding the sociopolitical implications of natural disasters. First, it joins a growing number of studies that demonstrate the influence of natural disasters on patterns of political violence. Second, it highlights the importance of considering pandemics as important catalysts for social unrest and political instability alongside other forms of natural disasters. Third, it elucidates the mechanisms linking pandemic responses to unrest and highlights how specific policy responses can either provoke or suppress dissent. Finally, it empirically demonstrates the divergent influences that distinct pandemic-management policies have on patterns of political and social unrest.

Disease Outbreaks and Other "Disasters"

Along with other potentially devastating physical phenomena such as earthquakes, hurricanes, and tsunamis, pandemics and epidemics are often classified as "natural" disasters.[2] While such events are commonly described as disasters, their occurrence alone does not necessarily constitute a disaster. Rather, natural disasters occur when naturally occurring meteorological, geological, or biological phenomena cause substantial loss of life and/or produce significant social and economic disruptions (Reinhardt and Ross 2019). For example, earthquakes in Antarctica and cyclones over empty expanses of the Pacific Ocean are not considered "disasters" because they rarely affect human society in a meaningful way. This distinction is important because the observed physical phenomena are (largely) exogenous, while the disasters they often produce are endogenous to actions authorities and citizens undertake in anticipation of such phenomena and how they respond to them after they occur. A variety of institutional and economic factors determine the scope and scale of a disaster, including land use patterns, public health system capacity, transportation, infrastructure quality, building regulations, and emergency management and first responder resources (Kahn 2005). The specific disaster management and preparedness policies that national and local authorities adopt

[1] Incorrectly termed the "Spanish Flu."

[2] See classifications by the International Committee for the Red Cross and Red Crescent Societies (IFRC) (https://www.ifrc.org/what-disaster) and Emergency Events Database (EM-DAT) (https://www.ifrc.org/what-disaster).

also influence disaster severity.[3] Moreover, these policies interact with individual and cultural decisions about where and how people live, work, and organize their communities to produce varying levels of risk from the potentially disastrous effects of exogenous critical events (Ross 2013).

Because disasters are largely a consequence of policy decisions, they often have political repercussions, with citizens blaming political leaders for the negative disaster outcomes (Maestas et al. 2008). Costly or poorly managed disasters can adversely impact citizens' support for authorities and undermine trust in government (Carlin, Love, and Zechmeister 2014). Moreover, as the scale of disasters increases, leaders are increasingly likely to face removal from office (Quiroz Flores and Smith 2013). Previous studies likewise demonstrate that disasters can create opportunities for citizens to mobilize in opposition to the government and its policies, potentially raising the risk of violence in disaster-affected areas (Nel and Righarts 2008; Wood and Wright 2016). Yet, how well governments prepare for disasters and the ways in which authorities respond to them significantly influence the risk of conflict and unrest (Mitchell and Pizzi 2020).[4]

Like other disasters, the level of disruption pandemics create and the costs they impose are functions of various structural, institutional, and social factors, including the specific strategies authorities adopt to prepare for and respond to them. Given these similarities, pandemics may elicit similar behavioral responses from the populations they affect, including provoking social and political violence. Yet, evidence from the handful of recent studies addressing this question provides mixed support for any direct relationship between COVID-19 and patterns of organized violence (Polo 2020; Ide 2021). With the exception of historical analyses of specific epidemics (e.g., Hays 2005; Sahedeo 2005; Cohn 2018), the role of pandemics in motivating social unrest and political violence has received limited attention. Moreover, the theoretical mechanisms underlying these potential relationships remain largely unexplored.

Addressing these relationships requires appreciating key differences between pandemics and other disasters. First, unlike slow-onset disaster events such as droughts, pandemics typically intensify quickly, meaning the situation often worsens before public officials develop and implement new policies or citizens adjust their behavior. In contrast to rapid-onset events such as earthquakes or hurricanes, which produce devastating but short-term shocks, disease outbreaks often stretch over weeks or months, prolonging the need for policy interventions and postponing the implementation of post-disaster recovery plans. Pandemics are, therefore, particularly taxing on society because they abruptly impose costs but also demand ongoing and rapid adjustments to human interaction and social organization. Moreover, due to the dynamic and evolving nature of pandemics, governments routinely alter and revise their management and mitigation policies over time, which can produce confusion and frustration among the public. The duration of pandemic-mitigation policies and the temporal variation in their stringency may, therefore, create incentives and opportunities for resistance that do not exist in the context of other forms of natural disasters.

Most importantly, perhaps, pandemics differ from other disasters in that the event itself is driven by basic patterns of human interaction in ways that floods, earthquakes, and tsunamis are not. The distinctly social nature of infectious disease outbreaks necessitates response strategies that are inherently different from those developed to manage other disasters. Response strategies for natural disasters such as earthquakes and floods largely focus on the consequences of the physical event: evacuation, medical treatment, restoring vital services, and reconstruction. Pandemic-management strategies, however, often focus on ameliorating the intensity of the precipitating event itself. These strategies seek to mitigate the disaster by restricting the spread of infection within the population, the success of which hinges on public compliance with the response plan implemented by authorities. Moreover, public compliance with pandemic-mitigation strategies often differs markedly from compliance with government responses to other categories of disasters. This is because the policies themselves, which often include imposing quarantines, closing public spaces, shuttering businesses, and prohibiting gatherings, represent substantial disruptions to the lives and livelihoods of large segments of the population. Consequently, as we discuss below, policies enacted to contain the spread of disease—and not the precipitating "disaster" event itself—are the primary motivators of pandemic-related dissent.

Pandemics and Popular Resistance

Despite significant advances in medicine and public health, the disease-mitigation policies adopted by contemporary governments are strikingly similar to those used to contain smallpox, cholera, and other lethal pathogens in previous centuries (Conti 2020). Such policies have historically been met with poor public compliance, open defiance, and even violent resistance. For example, resentment toward restrictions implemented by the Russian government to contain the 1892 cholera outbreak in Tashkent sparked riots and intercommunal violence (Sahedeo 2005). Similarly, mistrust of medical authorities and resistance to the British government's cholera-management policies sparked unrest in 1832 Liverpool (Gill, Burrell, and Brown 2001). In 2014, Ebola-related quarantine efforts contributed to social unrest and violence in Monrovia, Liberia (Onishi 2014). Government-imposed quarantines and lockdowns to combat COVID-19 have likewise sparked violent demonstrations and clashes with security forces in Lebanon, Germany, and several other countries (BBC 2020; Al-Jazeera 2021). In short, government efforts to mitigate the spread of disease often represent an important source of public dissatisfaction and may motivate social unrest.

To better understand this potential relationship, we focus on the manner in which a given set of policies shape the grievances that motivate dissent and influence individuals' perceptions of the opportunities available for successful mobilization. This approach allows us to make predictions about the heterogenous influence of discrete categories of policies on popular mobilization within pandemic-affected countries.

Grievance and Opportunity Models of Dissent

The contributions of grievance and opportunity models of popular mobilization are well known. Grievance-oriented explanations focus on the role of frustrations resulting from unmet expectations, perceived deprivation, and real or perceived threats to a group in motivating citizens to engage in political dissent (e.g., Feierabend and Feierabend 1966; Gurr 1970). As the intensity and scope of grievances expand, people become increasingly likely to mobilize against the

[3] Such factors also explain variations in economic and human costs of pandemics (e.g., Windsor et al. 2020).

[4] Failure to account for government preparation and response may explain the divergent findings on the relationship between disasters and political violence (e.g., Omelichiva 2011; Pfaff 2020).

incumbent government in an attempt to provoke change. While no universal understanding of grievance intensity exists among scholars (Simmons 2014), previous studies have identified general characteristics of individual grievances that are most likely to precipitate dissent and unrest (Walsh 1981; Snow et al. 1998). These include the abruptness of the onset of the factor responsible for the grievance (e.g., a given policy), the scope of disruption to quotidian routines, and the perceived scale of material or symbolic losses.[5]

Political opportunity arguments highlight the strategic nature of protest and focus on how changes in social and political contexts facilitate or constrain popular mobilization (e.g., McAdam, Tarrow, and Tilly 2001; Meyer 2004). Conceptualization of "opportunity" varies widely within the literature and includes groups' access to resources, individuals' perceptions of threat and cost of mobilization, and the presence (and strength) of mobilizing structures. Opportunity structures determined by institutional or structural factors are relatively fixed. For example, norms and legal protections that exist in liberal democracies generally create low costs for mobilization, thus resulting in more frequent protest and nonviolent dissent in those countries compared to their illiberal, autocratic counterparts. Yet, opportunities can also vary in response to unexpected changes in the social and political landscape. New political alliances, new policies, changes in repression levels, or exogenous shocks such as natural disasters or economic crises influence patterns of dissent principally by raising or lowering the costs associated with collective mobilization. Consequently, even in countries where structural and institutional factors generally produce low (high) levels of unrest, shifts in opportunity structures can contribute to an increase (decrease) in dissident activity relative to the baseline levels observed in a given location.

Scholars that privilege the role of opportunity structures recognize the importance of grievances as an impetus for organized challenges to state authority yet contend that grievances alone cannot explain the timing and scale of unrest because they are both commonplace and relatively constant over time (Oberschall 1978). Rather, they view dissidents as strategic actors who act upon changes in their environment that alter the costs of mobilization, influence the odds of success, and favor some strategies of dissent over others (Tarrow 1994). Grievances may create incentives for dissent, but the timing and scope of dissent hinge on changes in opportunity structures.

While historically treated as distinct and competing explanations for organized dissent, recent scholarship has sought to reconcile the two frameworks and increasingly views dissent as the joint product of grievance and opportunity (e.g., Simmons 2014; Hendrix and Haggard 2015). Such studies highlight the interdependent nature of these mechanisms by demonstrating how rising grievances and expanding political opportunities interact to produce popular dissent (Dyrstad and Hillesund 2020) or highlighting how specific factors can simultaneously (or sequentially) stoke grievances *and* influence opportunities for mobilization (Taydas, Enia, and James 2011). In line with these studies, we hold that grievances motivate individuals or groups to exploit changes in the opportunity structures that facilitate mobilization. Grievances are therefore an important (although not strictly necessary) condition for dissent, while opportunity structures profoundly influence the extent to which groups and individuals are able to mobilize in response to those grievances.

[5] Material losses include wealth depreciation or unemployment, while symbolic losses reflect threats to rights, freedoms, or privileges.

Pandemic-Response Policies, Grievances, and Opportunities

Using these theories as our point of departure, we argue that unrest depends on the manner in which specific policies simultaneously influence both the intensity of grievances and constraints on political opportunities. Policies inducing intense grievances may generate dissent provided sufficient opportunities for mobilization exist. Pandemic-containment efforts may facilitate unrest by lowering the cost of mobilization. Yet, even in the face of rising grievances, policies that raise the cost of mobilization may deter dissent.

Figure 1 illustrates the theoretical pathways between disease outbreaks and social unrest. Following the shock of a disease outbreak, governments adopt containment policies to mitigate the economic and human cost of the disease and facilitate individual and public recovery from those costs. We assume that citizens value government responsiveness and generally (initially) support government actions to suppress disease outbreaks. However, they may reject—and perhaps actively resist—policies that they view as unjust, discriminatory, or overly restrictive. Such policies are, therefore, likely to generate grievances and increase citizens' willingness to challenge implementation.

Grievance-based arguments typically assume the likelihood that a set of grievances spark unrest is related to the intensity with which those grievances are felt by the population. Although the extent of policy dissatisfaction varies depending on prevailing norms and expectations, some policies will be more likely to generate intense grievances than others. Pandemic-response policies that substantially and abruptly disrupt the day-to-day lives of a large number of citizens, adversely impact their material well-being, and threaten widely valued rights and privileges is the most likely to provoke resistance and backlash.

Efforts to contain infection often entail constraints on social interactions that some individuals and groups find unreasonable. In liberal democratic societies, the right to peaceful assembly is inextricably tied to the freedom of expression (Emerson 1964; Inazu 2012). Participation in religious and cultural gatherings, which may represent essential aspects of individual or group identity, are viewed as inviolable rights fundamental to the maintenance of community life (Ysseldyk, Matheson, and Anisman 2010; Corbin 2020). Despite cross-cultural variations in the significance of these events, restrictions on gatherings are likely to provoke grievances across multiple subsets of a population.

Pandemic-containment policies may also indirectly generate grievances and provoke unrest by threatening citizens' material well-being. Pandemics may result in food shortages if illness among workers produces labor shortages or if restrictions on mobility (travel bans or community quarantines) impede food production and distribution (Kodish et al. 2019). Food shortages and food price spikes often represent sources of social unrest (e.g., Bellemare 2014; Hendrix and Haggard 2015). Consequently, to the extent that pandemics (or pandemic restrictions) create such conditions, they are likely to indirectly promote dissent. Indeed, quarantine measures adopted by the French government in response to plague outbreaks in the early 1700s produced food shortages and price shocks, which in turn provoked large-scale urban unrest (Hays 2005, 138–40). Similarly, pandemic-related restrictions on commerce and economic interaction, such as limits on opening hours, caps on customers, and forced shop closures, may hinder economic growth, increase unemployment, and decrease wages. These grievance-generating factors have also been linked to the intensity of social unrest (Della Porta 2008; Bohlken and Sergenti 2010).

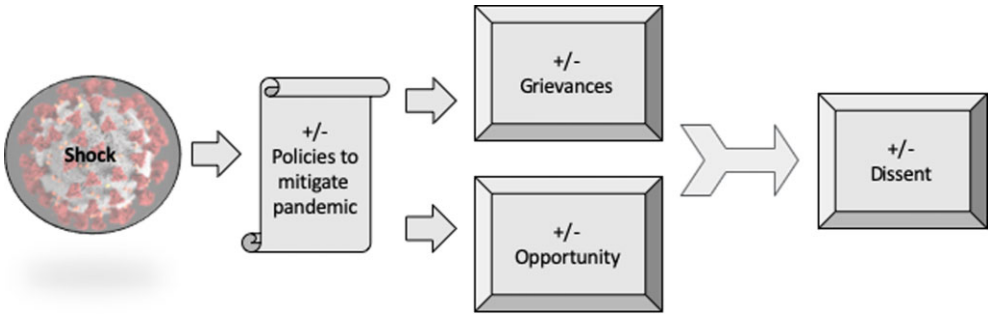

Figure 1. Theoretical model.

Other policies, however, potentially ameliorate grievances. Aware that efforts to control the pandemic may provoke animosity, leaders may seek to offset adverse consequences with policies that respond explicitly to grievances. Such policies are most commonly introduced in countries with highly developed social welfare systems and economic capacity. While these policies are unlikely to fully negate grievances, they should help moderate public opinion and reduce incentives to mobilize.

Pandemic-response policies may also influence citizens' perceptions of the opportunities available to engage in dissent by changing perceptions of the costs associated with engagement. Protesting carries opportunity costs, which result from exchanging time spent on other activities for time spent on collective dissent, and some policies may marginally reduce these costs. Policies that prohibit an individual from investing time and effort in employment, education, or leisure effectively obviate these costs, thus increasing an individual's expected benefit of mobilization versus inaction (see Becker 1968; Grossman 1991). Closing workplaces, banning travel, and canceling festivals and events leave individuals with more time to devote to dissent.

Other policies raise the cost of collective action and thus may suppress dissent, even in the presence of grievances. Policies that restrict citizens' ability to mobilize, or impose substantial penalties for doing so, are the most likely to negatively influence dissent. Restrictions on large group gatherings and public events were among the first mitigation policies adopted cross-nationally, principally because such activity was seen as a primary vector through which COVID-19 spread. Many governments subsequently closed public transportation and imposed stay-at-home orders as they sought to limit social interaction.

Although rarely explicitly designed to deter dissent, some policies nonetheless impede citizens' ability to mobilize. By prohibiting or limiting public gatherings, governments have effectively criminalized some forms of assembly and protest. Similarly, restrictions on internal movement hamper the coordination of dissent activities, particularly where organizers seek to bring supporters from outlying areas into major cities. Such policies are likely to cause dissatisfaction for some individuals, yet the effects of these grievances on unrest are likely outweighed by the increased costs they impose on mobilization efforts.

Because we expect different policies to influence grievances and opportunities in distinct ways, examining a government's suite of policies is important to understanding the relationship between pandemic response and social unrest. Notably, the direct effect of a given policy on grievances and/or opportunity structures can produce *discrete*, *reinforcing*, or *countervailing* influences on the likelihood of unrest. A *discrete* influence exists where a given policy influences *either* grievances or opportunities but not both. In this case, we anticipate that the overall relationship between the policy and unrest is directly related to the influence on the relevant mechanism. For example, a policy that increases (decreases) grievances but has no influence on opportunities will increase (decrease) the odds of dissent (and vice versa). *Reinforcing* influences occur when a given policy simultaneously contributes to an increase (decrease) in *both* grievances and opportunities. We anticipate that such policies are the most likely to influence patterns of social unrest and will exert the greatest substantive effect.

Countervailing influences exist when a given policy exerts differential effects on grievances and opportunities. These mechanisms may offset one another, with the relative strength of each determining a policy's effect on social unrest. Opportunity structures are largely viewed as influential determinants of the timing and intensity of dissent, even among theories that recognize the fundamental role of grievances (e.g., McAdam, Tarrow, and Tilly 2001; Simmons 2014). Consequently, the intensity of the grievances and the value of participating in dissent activities must exceed the additional costs imposed by the newly imposed constraints on opportunity. In other words, increasingly intense grievances are necessary to overcome moderate increases in constraints on political opportunities. Grievances can lead to unrest even in the face of rising restrictions on opportunity but only where grievances rise faster than opportunity constraints. We, therefore, expect moderate constraints on opportunities to largely offset the incentives for unrest created by marginal and moderately intense grievances. Similarly, policies that severely restrict opportunities for mobilization suppress dissent, even in the face of moderately intense grievances. That said, we hold that intense grievances, particularly those perceived to pose the greatest threat to quotidian routines, may ultimately contribute to rising unrest where a given pandemic-response policy exerts only a marginal constraint on opportunities.

We apply our theoretical framework to sets of pandemic-response policies. We focus explicitly on the extent to which each set of policies is expected to influence grievances that motivate dissent and opportunities for individuals to mobilize. We then derive theoretical expectations regarding the effect of each policy type on the frequency of social unrest.

COVID-19-Mitigation Policies As Correlates of Social Unrest

Governments have adopted a diverse range of COVID-19-mitigation policies. While some have eschewed severe restrictions on social interactions and relied on guidance and information campaigns, others have attempted to "lock

Table 1. Expected effects of pandemic-response policies

H	*Policy category*	*Grievances*	*Opportunities*	*Influence*	*Social unrest*
1	Workplace closures	+	+	Reinforcing	+
2	School closures	+	+	Reinforcing	+
3	Restrictions on internal movement	+	No effect	Discrete	+
4	Restrictions on international travel	+	No effect	Discrete	+
5	Restrictions on gatherings	+	–	Countervailing	No effect
6	Stay-at-home orders	+	–	Countervailing	No effect
7	Restrictions on public transportation	+	–	Countervailing	–
8	Economic support	–	No effect	Discrete	–
9	Economic support × Workplace closures	–	No effect	Attenuating	–

down" society by closing schools and businesses, prohibiting travel, and issuing "stay-at-home orders." Despite cross-national variations, these policies are similar in the areas of public and private life they seek to regulate. Public health and public policy scholars have organized the policies into categories (e.g., Hale et al. 2020), classification efforts that simplify our analysis by offering a predetermined list of COVID-19 response policies to which we can apply our analytical framework. We use the following policy categories, included in Hale et al. (2020), to develop policy-specific hypotheses and conduct our empirical analysis: *workplace closures*, *school closures*, *restrictions on public/private gatherings*, *restrictions on internal movement*, *restrictions on public transportation*, *restrictions on international travel*, *stay-at-home requirements*, and various forms of *economic support*. We summarize our expectations, including both the anticipated influence of the policy on grievances and opportunities and the overall influence on social unrest, in table 1.

Workplace Closures

To arrest the spread of COVID-19, some governments severely restricted commerce and closed a wide range of businesses and workplaces, including retail shops, restaurants and bars, leisure and entertainment centers, and other "nonessential" services. We expect such policies to provoke unrest via *reinforcing* influences, simultaneously generating or intensifying grievances and creating opportunities for dissent. With respect to opportunities, workplace closures eliminate the direct trade-off between earnings and expressing grievances through participation in organized dissent. This relationship is illustrated by protests in Karachi, Pakistan, where laborers who were forcibly idled by business closures were able to mobilize against government lockdown policies (Latif 2020). Workplace closures thereby reduce one of the most important barriers to mobilization by reshaping perceptions of the utility of dissent and reducing the transaction costs associated with mobilization.

In terms of grievances, the effect is most directly related to the adverse economic consequences associated with the policy, including negative impacts on macroeconomic health, rapidly disrupted supply chains, price distortions, and shortages of key products (including foodstuffs and medicines). These mechanisms occurred in Quezon City, Philippines, where food shortages resulting from the COVID-19 lockdown provoked demonstrations and police violence against protesters (CNN 2020). Policies persisting over weeks or months contribute to wage loss and unemployment, representing existential threats to livelihoods and generating significant dissatisfaction. Protests against COVID-19-related workplace closures have become common in places such as the United States, where more than half the states had experienced protests demanding the reopening of economic activity by May 2020 (Budryk 2020). In Malawi, a court injunction prevented a twenty-one-day lockdown after protests over its anticipated effects on the poorest in society, who felt that the risk of contracting COVID-19 was preferable to dying of hunger (Al-Jazeera 2020).

The *reinforcing* nature of these grievance and opportunity mechanisms lead us to expect that:

H1: *Workplace closures are positively associated with social unrest.*

School Closures

The forced closure of educational institutions creates grievances among multiple subsets of the population. For students, school closures reduce access to social networks and strain interpersonal relationships, potentially harming mental health. Closures also deprive physically vulnerable students of safe spaces and can exacerbate food insecurity for economically vulnerable students who rely on schools for meals. Many students recognize the adverse impact of school closures on their long-term earning potential and career aspirations. Parents similarly resent these policies because they recognize the negative repercussions school closures have on children's well-being and future economic security. School closures also impose costs on parents, whose own earnings may be threatened if they are forced to exchange work hours for childcare.

While the influence on grievances is clear, the effect on opportunity structures is more ambiguous and variable within a society. For adolescents and young adults, school closures mean they no longer have to forego an education in order to participate in a protest, thus potentially lowering the opportunity cost of mobilization. Moreover, while school closures diminish opportunities for face-to-face interactions, interconnectivity via cell phones and social media helps students overcome many communication and coordination problems that the policies would have imposed on previous generations. Consequently, for adolescents and university students, school closures produce *reinforcing* grievances and opportunities for mobilization, which should translate into more-frequent dissent.

By contrast, closing schools raises opportunity costs for parents by increasing the amount of time they must devote to childcare. Thus, the effects of grievances and opportunities on social unrest are *countervailing* in the case of parents of school-aged children. For many parents, however, the intensity of the grievances may overcome any additional impediments to mobilization. Indeed, parents and children in multiple countries have mobilized to protest school

closures they perceive to be detrimental to children's well-being (Miller 2021).

This discussion highlights the potentially diverse effects of some sets of policies across different subsets of the population. While school closures create grievances among both parents and older students, the effect of the policy on opportunity structures varies across these groups. This ambiguity complicates our ability to make clear predictions about the influence of the policy on social unrest. However, because the policy is likely to generate intense dissatisfaction across multiple subgroups within society while lowering the opportunity costs for some groups, we expect school closures to exert a broadly positive influence on aggregate levels of social unrest.

H2: *School closures are positively associated with social unrest.*

Restrictions on Internal Movement

As with many infectious diseases, COVID-19 infection rates exhibit significant geographic variation. COVID-19 hotspots have compelled governments to quarantine infected communities. For example, Chinese authorities isolated the city of Wuhan, and Italy restricted travel in and out of portions of Lombardy. In other cases, governments restricted individuals' ability to move within the country, forcing citizens to remain within defined local areas.

These policies created substantial grievances. Implicitly prohibiting visits to friends and family, the policies were viewed as unjust intrusions into citizens' personal lives. Restrictions in Mumbai contributed to disruptions in supply chains and artificially constrained labor markets by preventing migrant workers from traveling to new worksites or from returning home to await the end of lockdown (Miglani and Jain 2020). Such policies also affect farmers, producers, the transportation sector, and ultimately the consumers via rising prices and restricted supplies, potentially creating far-reaching grievances.

Counterintuitively, perhaps, these policies impose relatively few additional costs on mobilization. While they restrict travel over longer distances and between domestic cities, they do not usually restrict movement within cities or local metropolitan areas. Because citizens would still have the means to organize and demonstrate within their city or region of residence, the policy is not expected to create significant barriers to mobilization. Indeed, such restrictions may reduce the overall size of protest events but increase their number and alter their geographic distribution. Unable to travel and converge in a few large metropolitan areas, aggrieved citizens may stage larger numbers of smaller protests in different areas of the country. Since restrictions on internal movement have the potential to raise grievances without an expected increase in opportunities, we expect this *discrete* effect on grievances to yield a net positive effect on unrest.

H3: *Restrictions on internal movement are positively associated with social unrest.*

Restrictions on International Travel

Border restrictions were among the first imposed in response to the emerging COVID-19 pandemic, ranging from prohibiting travel from specific countries to the complete closure of international borders. Depending on their severity, such policies are likely to provoke grievances among specific subsets of the population, including those in the tourism/hospitality industry, business travelers, individuals with family overseas, refugees, and transborder migrant workers. Border closures represent a particularly dire threat to the well-being and livelihoods of international migrants and workers in the hospitality industry because the well-being of the former depends on their ability to cross international borders to earn wages while economic viability of the latter often depends on their customers' ability to do so. These groups are, therefore, the most likely to experience intense grievances when borders close and thus to engage in dissent. For instance, truck drivers recently staged protests against restrictions on cross-border transportation between Cameroon and Chad (Kindzeka 2020). Refugees are also likely to experience intense grievances from border closures. Indeed, most countries have fully or partially closed their borders during the COVID-19 pandemic, and nearly half make no exception for refugees and asylum seekers (UNHCR 2020). Tightening controls in border settlements combine with prolonged detention and poor living conditions, both of which have been exacerbated by pandemic restrictions, to foster resentment that can rapidly evolve into unrest. In Greece, the imposition of COVID-19-related restrictions intensified tensions among authorities, citizens, and migrants, resulting in protests, riots, and clashes with police (Smith 2020). For the millions of workers worldwide whose livelihoods depend on international travel, such travel restrictions are likely to induce grievances by contributing to job insecurity and lost wages.

By contrast, international travel controls will typically exert few constraints on mobilization opportunities. Few individuals travel internationally to protests, and it is difficult to see how border closures would directly create other impediments to mobilization. We thus expect grievance and opportunity to exert *discrete* effects with respect to restrictions on international travel. Due to the disproportionally greater effect of fueling grievances, we expect a net positive influence on the observed level of unrest in a country.

H4: *Restrictions on international travel are positively associated with social unrest.*

Restrictions on Gatherings

We generally expect that restrictions on individuals' ability to gather in public or private will exhibit *countervailing* forces on grievances and opportunities. As discussed above, group gatherings—whether political, religious, or social—are highly valued in most societies. Whether perceived as unjust infringements on fundamental rights or assaults on traditions, restrictions on public and private gatherings are expected to engender public animosity and thus represent a source of grievance.

Despite such resentment, these policies represent a potentially powerful constraint on mobilization by threatening to fine, detain, or otherwise sanction violators. They provide additional opportunities and incentives for security forces to repress organized dissent and abuse individuals that challenge the new laws. Indeed, human rights groups claim that many governments have used the pandemic as an opportunity to suppress peaceful protest and silence political opposition (HRW 2021). The severity of these sanctions varies by country, with some governments issuing small fines and others detaining or physically abusing violators. Thus, the suppressive effect of the policy partly depends on citizens' expectations about the severity of these sanctions. In line with our general argument, the policy would need to generate intense grievances in order to induce

dissent in contexts where authorities are expected to impose more costly sanctions. While these restrictions disrupt many citizens' daily routines, most are likely to view them as a temporary inconvenience rather than a direct threat to their material and psychological well-being, particularly where restrictions ban large group gatherings but permit small groups to meet.

Consequently, while restrictions on gatherings create substantial grievances, they often impose formidable constraints on citizens' ability to mobilize. On balance, we therefore contend that the *countervailing* influences of grievance and opportunity negate any direct effect on unrest.

H5: *Restrictions on public/private gatherings are not associated with social unrest.*

Stay-at-Home Requirements

Similar to our argument regarding the effects of restrictions on public gatherings, the grievances and opportunities resulting from stay-at-home or "shelter-in-place" orders are likely to exert *countervailing* influences on social unrest. Under the most restrictive requirements, citizens were forbidden from leaving their homes except to seek essential needs such as medical care or food. Such policies create grievances by effectively imposing house arrest on many individuals. The stress of such restrictions is particularly severe for economically deprived individuals in urban areas, which are often densely populated. Consequently, we expect the most stringent of these restrictions to create intense grievances among citizens.

We also expect such policies to exert an appreciable negative influence on opportunities for mobilization. The opportunity costs imposed by these policies are expected to be greater than those resulting from restrictions on gatherings. Stay-at-home orders not only prohibit group activities but largely prohibit individuals from engaging in all but essential activities outside their domicile. As such, participation in public assemblies has not been deemed essential by many governments during the pandemic. Organized dissent thus represents a direct violation of pandemic-related restrictions in many countries, and violators are therefore subject to sanctions or fines that raise the costs of mobilization.

Additionally, ambiguity of rules, frequent changes in regulations, and cross-national variations in these restrictions complicate our ability to develop expectations about their effect on unrest. For example, in the United Kingdom, stay-at-home requirements have alternately meant: complete lockdown with movement only for essential food and medical services, or for "key workers"; partial lockdown with travel to work and school allowed but no socializing; and partial lockdown with exceptions for work and school, as well as social support bubbles and extended family. In some countries, stay-at-home requirements serve as umbrella policies that include several of the other policies we consider, including workplace closures and restrictions on movement, gathering, and transportation. The *countervailing* influence of grievance and opportunities, combined with the complications and inconsistencies in what stay-at-home policies actually signify to the people restricted by them, leads us to expect little relationship between these policies and patterns of social unrest.

H6: *Stay-at-home orders are not associated with changes in social unrest.*

Closing Public Transportation

During the pandemic, many governments restricted the usage of public transportation and, in some cases, completely suspended domestic bus, metro, and passenger rail services. As with restrictions on internal movement, the motivation is to suppress the spread of the disease. Still, important differences exist between the influences the two types of restrictions should have on social unrest. Both policies create grievances; yet, while internal movement restrictions have little influence on opportunities, restrictions on public transportation represent a powerful constraint on opportunities. In much of the world, citizens rely extensively on public transportation to travel within local geographic areas. Restrictions on these transport systems, therefore, create significant impediments to such movement: the exact purpose for which they were created. As such, they also severely constrain citizens' ability to engage in organized dissent by substantially raising mobilization costs.

In short, if citizens are unable to move within their local areas with ease, the number of citizens available to participate in dissident activities should decrease. Indeed, authorities often restrict or manipulate public transportation services and schedules as a way to contain or control large-scale protests in urban areas (e.g., Solomon and Watcharasakwet 2020). Consequently, we expect that while transport restrictions may create significant grievances, the *countervailing* effect of constraining opportunities is too strong for the grievances to overcome and will ultimately suppress dissent.

H7: *Restrictions on public transportation are negatively associated with social unrest.*

Economic Support

Last, some pandemic-management policies may reduce the risk of social unrest. Policies that explicitly seek to offset the costs of the pandemic and subsequent economic burdens may ultimately help to ameliorate grievances, thus reducing incentives for organized resistance and dissent. During the COVID-19 pandemic, many governments implemented economic policies designed to mitigate the negative financial consequences of restrictions described above. These policies include a wide array of support programs, including worker furloughs, cash payments to individuals, business subsidies, debt/loan relief, and eviction suspensions. These policies should broadly reduce some pandemic-related grievances. They should not, however, exert a discernible influence on the opportunity costs for individuals. We, therefore, expect that these policies reduce the frequency of social unrest.

H8: *Greater levels of economic support are negatively associated with social unrest.*

While we anticipate that economic support exerts an independent negative relationship on social unrest, we note above that governments often adopt these policies with the explicit intention of ameliorating the adverse effects of other policies. In particular, because workplace closures potentially cause the most direct economic harm to individuals and the greatest increase in opportunities, we expect them to be a significant impetus for pandemic-related unrest. While some governments have extended some forms of economic benefits to all individuals who experienced economic hardships as a result of the pandemic, the most generous forms of support are often targeted to those individuals who

have lost earnings as a direct result of government-imposed workplace closures. To the extent that income support compensates for earnings lost as a result of forced workplace closures, they should substantially mitigate the grievances these closures produce. We, therefore, expect that economic support *attenuates* the hypothesized positive relationship between business closure policies and social unrest.[6]

H9: *Greater levels of economic support attenuate the relationship between workplace closings and social unrest.*

Empirical Approach

The variability of policies and policy outcomes around the world presents an ideal situation for examining the relationship between political opportunity, grievance, and civil unrest on a global scale. To empirically evaluate our hypotheses, we combine COVID-19-related events data from the recently constructed COVID-19 Disorder Tracker (CDT), which is part of the Armed Conflict Location and Events Dataset (ACLED; Raleigh et al. 2010), and information on COVID-19 restrictions from the publicly available Oxford COVID-19 Government Response Tracker (OxGRT; Hale et al. 2020). While conflict events and policies are tracked daily, the data may reflect delays in reporting these events through media sources. We use the country-week as our unit of analysis to help account for such imprecision in reporting. Our sample comprises 191 countries observed during 2020.[7] A country enters our analysis when the first COVID-19 death is reported. This inclusion criterion is important because COVID-19 arrived at different parts of the globe at different timepoints. Beginning the analysis for all countries at the same date would, therefore, risk comparing countries that had already begun to impose disease-mitigation policies with those that had yet to experience the pandemic.

The CDT supplies data on social unrest. This dataset is ideally suited for our analysis because it only includes events deemed "directly related to the pandemic" in that incident reports explicitly identify the pandemic as motivating the event and exclude events that might be indirectly related to COVID-19. The CDT captures a variety of different types of events, including episodes of state repression, violent mob attacks on individuals or groups allegedly deemed responsible for the virus, armed conflict, violence against frontline health workers, and demonstrations against government lockdowns.[8] Our dependent variable, *unrest*, is operationalized as the combined weekly count of protests and riots directly related to the pandemic for a given country.

We investigate a set of predictors representing the policies in place in a country in a given week according to the OxGRT. Our analysis focuses specifically on policies with distinct implications for personal behavior. For each of the restrictions discussed above, we use ordinal measures included in the OxGRT, with higher values indicating greater restrictions on behavior and/or a broader scope in terms of the targeted population.[9] We rely on the economic support index included in the government response tracker as our measure of *economic support*. This one-hundred-point scale reflects the extent of economic support, including both debt relief and direct income support, which governments provided to citizens during the pandemic.[10] Higher values indicate greater levels of support. For all policy measures, we take the highest value of the scale reported for a given policy in a given country during the week of observation. As constructed, these nine independent variables measure weekly variations in policy intensity.[11] We lag each indicator by one week to account for the time necessary for opponents to mobilize following policy enactment.

Figure 2 shows the spatial distribution of COVID-19-mitigation policies and COVID-related social unrest events in our sample. For figure 2a, we compute the average weekly severity of all COVID-19-related policies for each country in 2020. Figure 2b presents the total number of political violence and protest events directly related to COVID-19 in 2020. For each, darker shading represents higher values. These maps show some overlap between the severity of restrictions and the frequency of unrest; however, averaging and aggregating the data across an entire year obscure important temporal variation in the data. Indeed, most countries in our sample have varied the scope and severity of restrictions over time.[12] In order to assess our hypotheses, we therefore proceed with systematic empirical analysis of these dynamic data.

We include three control variables in our models. First, *public awareness campaigns* captures the extent to which government sought to educate the public about COVID-19 and its responses to the pandemic. This OxGRT indicator is important because it helps control for the information environment, which may influence citizens' perceptions of the legitimacy of the government's response and in turn their compliance with government policies. Second, we control for the weekly estimate of *deaths per capita* because citizens may adjust their behaviors according to their perception of the risk created by the disease. We create this measure by dividing the weekly count of deaths as reported in the Johns Hopkins University COVID-19 Dashboard (Dong, Du, and Gardner 2020) by the country's estimated 2020 population. This value is log-transformed to address skewness in the data. Finally, *repression* represents the weekly count of acts of violence by state authorities directed toward COVID-19-related unrest events. This variable accounts for the possibility that repression either acts as a deterrent to future protests or encourages subsequent "backlash" mobilization by creating additional grievances among the public. It also accounts for cross-sectional variations in the prevailing opportunity structures available to would-be dissidents. Consistently high baselines levels of repression raise the expected costs of mobilization while lower rates of repression allow greater opportunities for dissent. It is for this reason that protest is more common in liberal democracies, which are generally less likely to employ high levels of repressive violence against their citizens.

[6] *Countervailing effects* occur when a given policy simultaneously influences grievances and opportunities in opposite ways, whereas *attenuating effects* exist when the effect of one policy alters the effect of another policy on either grievances or opportunities.

[7] The OxGRT includes near-global coverage; however, the CDT currently excludes Canada, Australia, New Zealand, Papua New Guinea, and some small island countries.

[8] https://acleddata.com/acleddatanew/wp-content/uploads/dlm_uploads/2020/04/ACLED_Direct-COVID19-Disorder_Methodology-Brief_4.2020.pdf.

[9] See the online supplementary appendix (table A1) for summary statistics. See Hale et al. (2020) for policy category descriptions: https://www.bsg.ox.ac.uk/sites/default/files/2022-03/BSG-WP-2020-032-v13_0.pdf.

[10] The scale combines and normalizes the values for the separate policy indicators *income support* and *debt relief*. We divide this measure by ten to improve the visualization and comparison of estimated results with other policies. For additional information, see https://github.com/OxCGRT/covid-policy-tracker/blob/master/documentation/index_methodology.md.

[11] A variance inflation factor (VIF) test indicates no particular concern regarding multicollinearity (table A11).

[12] We illustrate the temporal covariation between the policies under investigation and the frequency of unrest for a sample of countries in figures A4–A11.

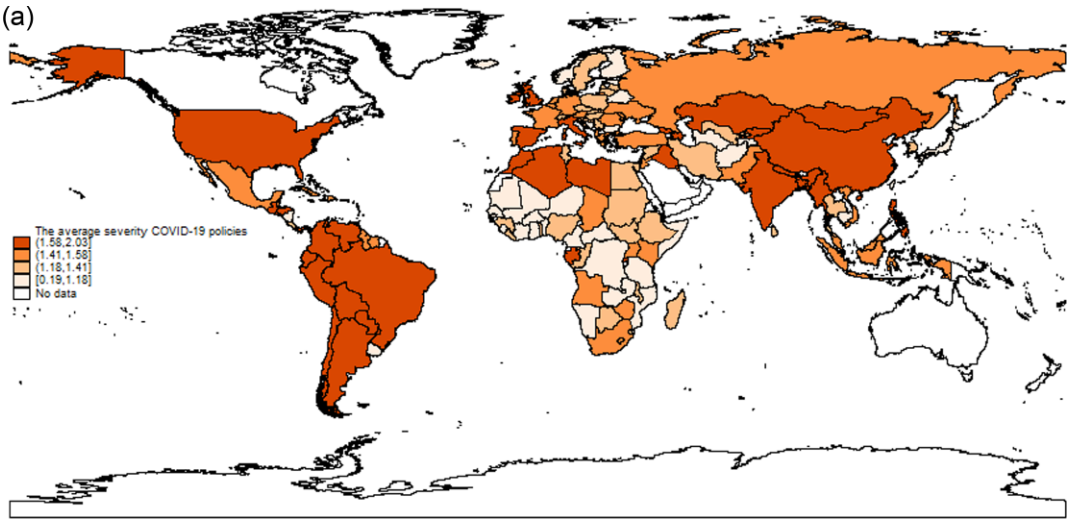

Figure 2a. Severity of COVID-19 restrictions based on data from the Oxford COVID-19 government response tracker.

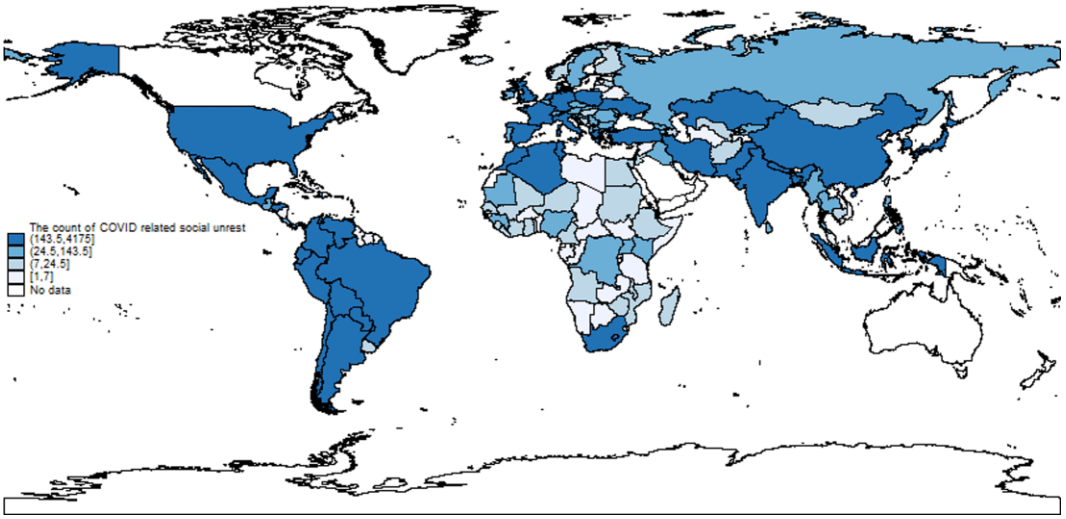

Figure 2b. Frequency of COVID-19-related unrest events based on data from the ACLED COVID-19 disorder tracker.

We adopt an estimation strategy that minimizes the risk of confounding bias and endogeneity caused by omitted variables. COVID-19-related policies and conflict events are (currently) limited to the year 2020. Country-level indicators traditionally used in studies of dissent and conflict (e.g., population, Gross Domestic Product (GDP) per capita, and regime type) are largely unavailable and would not vary within the sample because they are typically collected annually. To ensure that the absence of these indicators will not compromise our ability to account for confounding influences, we include both time and country-fixed effects in all of our models. With country-level fixed effects, we control for all unobserved time-invariant differences across countries, thus eliminating the need to account for factors such as GDP or political institutions that would not vary within the single-year temporal domain of our sample. We include weekly fixed effects to control for cyclical changes and trends, such as short-term economic changes or political events, which might induce dissent but for which we lack observable indicators. Combining country-fixed effects and weekly fixed effects is the most stringent means for controlling unmeasured and unobserved factors. Although this approach does not allow for a detailed exploration of how mechanisms such as infection rates influence the likelihood of COVID-19-related unrest, it significantly decreases our risk of estimation bias.

Because our dependent variable is a weekly count of unrest events, we employ a negative binomial model. We choose the negative binomial distribution over the Poisson because the former accounts for overdispersion in the data, which is present in our sample. Equation 1 details the conditional fixed-effects negative binomial model described above:

$$y_{it} = \beta_0 + \sum_{\kappa=1}^{8} \beta_\kappa P_{it\kappa} + \lambda I_{it} \times W_{it} + \sum_{j=1}^{3} \phi_j Z_{itj} + \mu_i + \theta_t + \varepsilon_{it} \quad (1)$$

where y_{it} is the number of *unrest* events in country i in week t, P_{itk} are the eight policies of interest in country i in week t in terms of their effects on the likelihood of unrest, $I_{it} \times W_{it}$ is the interaction term between *economic support* and *workplace closure* policies, Z_{itj} represent control variables in country i in week t, μ_i is country-fixed effects, and θ_t is weekly fixed effects.

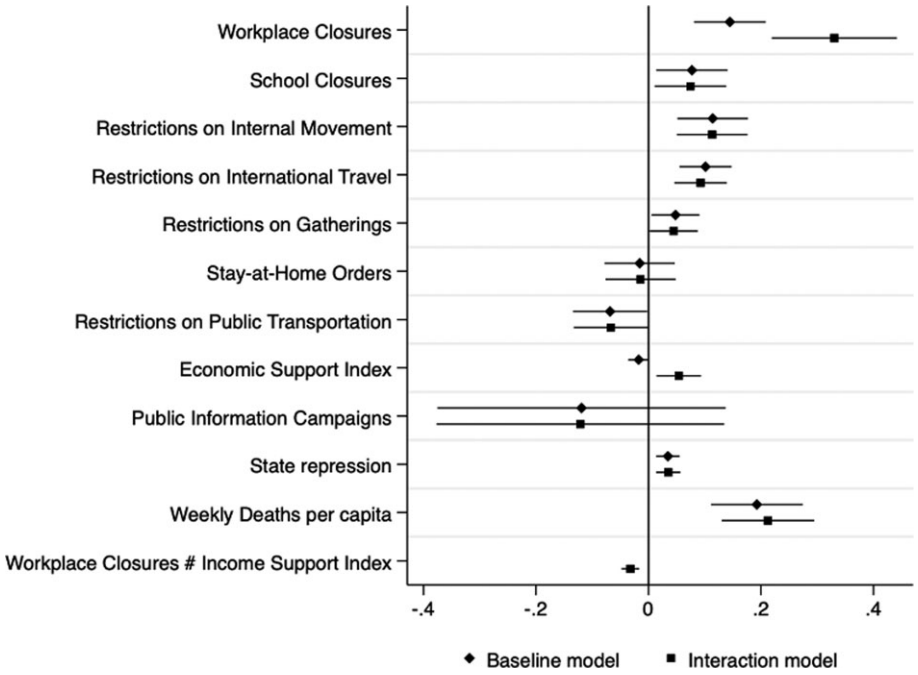

Figure 3. Coefficient estimates for pandemic-response policies on COVID-19-related unrest coefficient estimates and 95 percent confidence intervals. Models include location and time fixed effects. $N = 5{,}464$ (151 countries). Bayes Information Criterion = 17,180.69 (baseline model) and 17,173.09 (interaction model).

Results and Discussion

The results of our analyses are consistent with most—but not all—of our hypotheses. Nonetheless, taken as a whole, the results reported in figure 3 provide compelling support for our general argument. In line with H1, the coefficient for *workplace closures* is positive and statistically significant, indicating that greater restrictions on businesses and workplaces are associated with an increase in the frequency of social unrest. The positive and significant coefficient on *school closures* likewise offers support for H2, which posited that the forced closure of educational institutions would be associated with more-frequent unrest. As we theorized above, the *reinforcing* nature of the intense grievances and reduced mobilization costs created by these policies combine to promote unrest when authorities force businesses and schools to close during disease outbreaks. The coefficients for *international travel restrictions* and *restrictions on internal movement* are also positive and statistically significant, which support H3 and H4. We argued above that these restrictions are likely to create grievances without fundamentally changing opportunities for mobilization, and, as predicted, their imposition is associated with increased social unrest.

Unexpectedly, the results suggest that the effects of *restrictions on gatherings* and *stay-at-home orders* on unrest differ. Contrary to H5, we find that increasingly severe restrictions on social gatherings are positively associated with unrest behavior. However, consistent with H6, orders to shelter in place or stay home are not significantly associated with unrest. While the results for *restrictions on gatherings* fail to support our hypothesis, the effect is perhaps unsurprising. These restrictions are likely to produce substantial grievances because they disrupt the quotidian routines and behaviors of citizens. For some citizens, the intensity of these grievances may outweigh the perceived costs associated with mobilization. This would likely be the case if authorities normally imposed monetary fines or other moderate sanctions on violators. By contrast, the opportunity constraints imposed by *stay-at-home orders* are likely to exceed those resulting from other forms of restrictions on social gatherings. These restrictions are typically imposed only during periods of extreme risk and represent a significant escalation of restrictions on social interaction; as such, the penalties for violating these orders are likely to be comparatively greater. By raising the opportunity costs associated with dissent, *stay-at-home orders* are therefore more likely to suppress dissent even if they are associated with a marginally greater increase in grievances.

Consistent with H7, the coefficient on *closing public transport* is negative and statistically significant. We believe this relationship stems from the steep costs that the policy imposes on mobilization. Thus, even though the suspension of public transportation is likely to create moderate grievances among a subset of the population, it is likely to constrain the ability of those individuals most aggrieved by the policy to engage in collective dissent, thereby reducing the level of social unrest. As expected, the coefficient on *economic support* is negative; however, it fails to achieve statistical significance. This result suggests that the provision of economic support to citizens is not independently associated with lower levels of unrest. While this result fails to support H8, we also argued that economic support should condition the relationship between *workplace closures* and unrest. Our results provide evidence of this *attenuating* effect and therefore provide support for H9. Specifically, the introduction of economic support policies appears to effectively *attenuate* the positive influence of *workplace closures* on unrest.

These results validate seven of our nine hypotheses and offer broad support for our general theoretical argument. In particular, pandemic-response policies that *reinforce* the relationship between grievances and opportunities (e.g., workplace closures) are the most likely to prompt unrest, while the effect on unrest of policies producing *countervailing* effects depends on the relative strength of these mechanisms. Furthermore, we find support for our

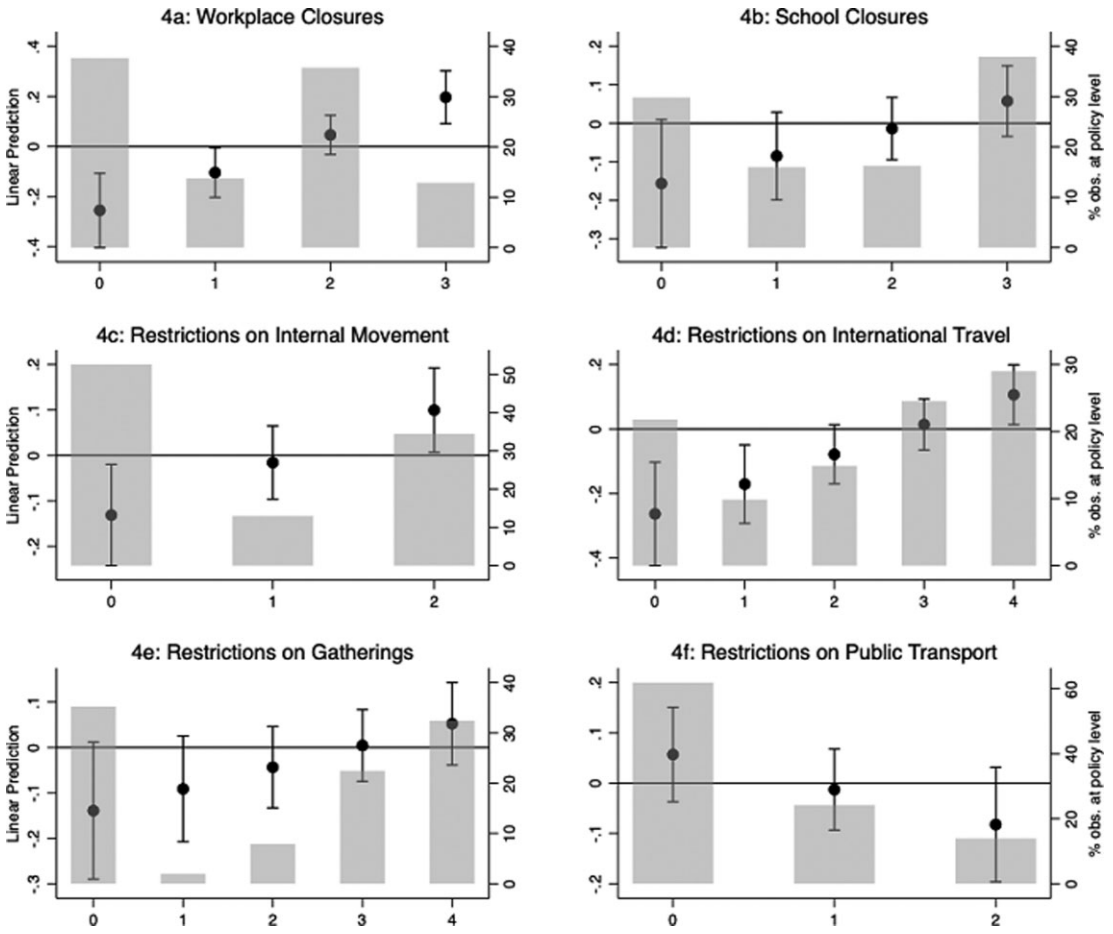

Figure 4. Marginal effects of pandemic-mitigation policies predicted number of social unrest events (left-hand *y*-axis) over different levels of a specified policy category (*x*-axis) as well as the proportion of observations in a given policy category (right-hand *y*-axis).

argument that policies that directly respond to the grievances induced by some types of restrictions can effectively *attenuate* the risk of unrest those restrictions create. By acknowledging and responding to grievances created by shuttering businesses through income-relief policies, governments can effectively ameliorate the risk of unrest.

Figure 4 shows the substantive effects of each of the policies found to exert a significant influence on unrest based on the results from model 1. Each panel illustrates the predicted linear effect of a given policy on *unrest* (left-hand *y*-axis) at each level of policy (*x*-axis). Vertical bars indicate the percent of observations from the sample that fall into a given level of the specified policy (right-hand *y*-axis). While we present the linear predictions in figure 4, we manually compute the percentage change in the predicted incidence of unrest using the exponentiated values of the linear prediction in order to more meaningfully illustrate the substantive impact of policies.[13]

Figure 4a shows the independent effect of *workplace closures* on unrest. Compared to the absence of restrictions, the policy is associated with a 57 percent increase in the average number of unrest events when governments force all but essential businesses to close. Figure 4b shows the effect for *school closures*. Compared to no restrictions, the complete closure of schools is expected to produce a roughly 24 percent increase in the number of unrest events. As figure 4c illustrates, moving from the lowest category of *restrictions on internal movement* to maximum restrictions, which typically bar entry/exit to certain regions of the country, is expected to increase the number of social unrest events by 26 percent. Figure 4d shows the positive influence of *restrictions on international travel* on unrest. Here, the average number of unrest events is predicted to increase by almost 45 percent when a government imposes a near-total ban on international travel or effectively closes borders compared when it imposes no restrictions on international travel. For *restrictions on gatherings*, compared to situations with no restrictions, the imposition of the highest category of restrictions, which limit gatherings to ten people or fewer, is expected to raise the average number of unrest events by about 21 percent (Figure 4e). Figure 4f illustrates that *restrictions on public transport* are associated with substantially less unrest, as unrest events decrease by 13 percent as a state moves from no restrictions on public transport to restrictions that prohibit most citizens from accessing it.

Hypothesis 9 posits that *economic support* mitigates the provocative effect of workplace-closing policies on social unrest. Figure 5 shows the marginal effect of *workplace closures* on *unrest* over the range of *economic support*. According to the predictions, where the government provides no compensatory economic support or very minimal support to citizens, increasingly stringent business closure policies are associated with a substantially larger and positive effect of this policy on dissent. Nevertheless, the positive influence of *workplace closures* weakens significantly as the level of

[13] See table A12 for conversions.

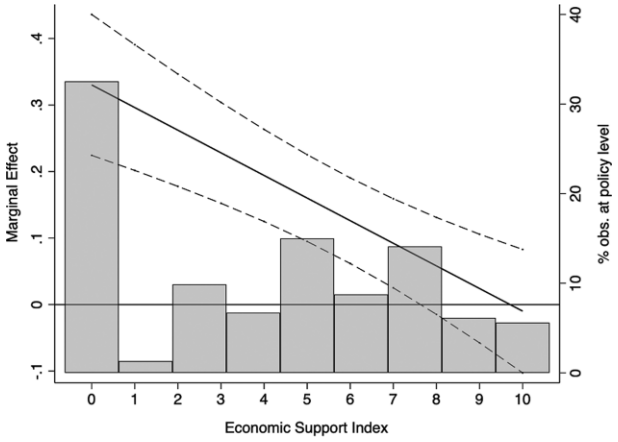

Figure 5. Conditional effect of economic support predicted effect of a one-category increase in workplace closure restriction on social unrest (left-hand *y*-axis) at different levels of economic support (*x*-axis) as well as the proportion of observations in a given policy category (right-hand *y*-axis).

economic support increases. At high levels of support—such as the simultaneous provision of debt relief and income support via furlough programs and direct payments to unemployed workers—the relationship becomes insignificant. High levels of economic support effectively negate the positive influence of workplace closures on social unrest.

Robustness Check and Alternative Specifications

In addition to the results presented above, we also conducted a variety of robustness checks. Overall, the results of these models are consistent with our primary arguments. They also highlight key areas that could benefit from further scrutiny. First, in order to examine the general influence of COVID-19 restrictions, we estimated the effect of the combined *stringency index* from the OxCGRT on unrest. This one-hundred-point index represents an aggregate measure of all "lockdown-style" policies that restrict people's behaviors. Using this measure, we find that stricter pandemic-response policies are positively associated with more frequent unrest (table A3). Second, we evaluated models in which we replaced the combined and normalized *economic support index* with separate measures of *income support* and *debt relief*. These results imply that both forms of support independently reduce the incidence of unrest. Interestingly, however, they also suggest that debt relief is more effective at attenuating the relationship between *workplace closures* and unrest (table A4). Next, we evaluated the effect of canceling public events, which we excluded from our primary models in the interest of parsimony and because such broad restrictions on gatherings typically supersede canceling large, organized events. Substituting *cancel public events* for *restrictions on gatherings* produced highly similar results (table A5), indicating that both types of restrictions are associated with more-frequent unrest. We also consider the potential attenuating influence of economic support policies on the relationship between restrictions other than *workplace closures* and unrest (table A6). These analyses provide some evidence that the provision of economic support can minimize the grievances associated with other policies that adversely impact citizens' material well-being, including *school closures*, *restrictions on internal movement*, *restrictions on international travel*, and *stay-at-home orders*.

We also examined the robustness of our results to the use of different estimators (tables A7 and A8). Because some readers may question the use of conditional fixed effects negative binomial models,[14] we reran the models using the fixed-effects Poisson estimator. The results are similar but show some intriguing differences. Principally, *stay-at-home orders* remain negative but become significant. The interaction of *workplace closures* and *economic support index* likewise remains negative but becomes insignificant, suggesting that economic support may exert an independent influence on unrest rather than conditioning the relationship between business closures and unrest. We also estimated a zero-inflated negative binomial (ZINB) model, which addresses potential concerns over the large number of structural zeros in the dataset. These models also produce only minor differences: *restrictions on gatherings* and *state repression* become insignificant while all other results are unchanged. Overall, we take these results as supportive of our principal arguments.

Conclusion

The COVID-19 pandemic has created a unique environment in which to study how government responses to disease outbreaks influence patterns of social and political behavior. In this article, we sought to understand how specific sets of policies designed to combat the spread of COVID-19 affect patterns of domestic social unrest. Our argument focused on the ways in which a given type of pandemic-response policy influences popular grievances and opportunities for citizens to mobilize in response to those grievances. Our model highlights how the grievance and opportunity mechanisms activated by a given policy can produce *discrete*, *reinforcing*, or *countervailing* influences on the likelihood of unrest. Understanding the simultaneous influence of a policy on each of these mechanisms is central to understanding its role in promoting or suppressing pandemic-related social unrest. Our results suggest that some types of policies, particularly those that create both opportunities and grievances, are associated with increased numbers of protests and riots. By contrast, policies that significantly raise the costs of mobilization are more often able to suppress unrest, even in the face of rising grievances. Results also suggest that government efforts to redress grievances created by restrictive policies can play an important role in reducing unrest.

Our research contributes to rapidly evolving discussions regarding the social and political impact of pandemics (particularly COVID-19) in several ways. First, in line with research on other forms of natural disasters, it highlights the importance of disentangling the effects of the disaster event from the effects of the policy responses adopted by authorities in response to the event. Pandemics are unlikely to play a central role in motivating unrest; rather, they motivate authorities to adopt specific sets of policies that may foster resentment and encourage resistance, potentially resulting in protests, riots, or other forms of dissent.

Second, we help clarify the mechanisms linking pandemic responses to unrest. By their nature, government efforts to contain pandemics often disrupt citizens' daily lives and jeopardize their material well-being. These efforts pose threats that elicit grievances that encourage resistance. While grievances alone are rarely sufficient to generate dissent, some pandemic-response policies induce intense grievances while simultaneously lowering the costs of mobilization. Prospect theory contends that individuals will

[14] See Guimarães (2008).

assume greater risks to prevent losses or maintain the status quo than they will to achieve gains (Snow et al. 1998). Owing to the losses created by the pandemic and pandemic-response policies, citizens are increasingly likely to engage in riskier and more costly dissent activities provided no substantial new opportunity costs arise.

Third, this study demonstrates the heterogenous effect of pandemic-containment policies on social unrest. Because each policy influences grievances and the costs of mobilization in a distinct way, policies will vary in terms of their role in promoting unrest. Fourth and related, these findings should help governments and health authorities select policies that can help limit disease spread without provoking substantial resistance and unrest. In particular, we highlight one strategy governments can employ to reduce the risk of dissent in response to pandemic-related restriction: compensating individuals for lost earnings and/or temporarily suspending debt payments dampen the influence of workplace closures on unrest. The provision of economic support during lockdown not only addresses the nature of grievances, but it is immediate and highly visible, allowing the government to demonstrate responsiveness to the costs associated with pandemic restriction.

Finally, we speak to the relationship between citizen perceptions and satisfaction and successful emergency management and hazards governance. When managing events such as pandemics, citizens' trust in government and perceptions of its legitimacy are key to ensuring compliance with mitigation policies (Reinhardt 2015). Although trust in government is often considered critical to successful disaster management (Demiroz and Kapucu 2012), we advance our collective understanding of the relationship by linking pandemic management to civil unrest. Our work points to supportive policies, such as income support, debt relief, and disaster-recovery subsidies, as ways to address public health concerns and maintain political trust, in part by reducing the likelihood of social and political unrest. We show that government efforts to strike a balance between policies that help reduce COVID-19 transmission rates and public compliance have implications for broader social and political stability.

This study also presents numerous opportunities for future research. Our model is intended to be broadly generalizable; we, therefore, made simplifying assumptions that future scholarship can relax. Most notably, we assume that the policies we scrutinize create similar grievances and result in similar opportunity structure changes across different social and political contexts. However, the effects of a given policy on social unrest likely depend on factors such as state capacity, political institutions, prevailing social norms, and citizens' trust in authorities. For example, because democratic institutions and liberal democratic norms lower the costs associated with dissent, grievance-inducing pandemic-response policies may have a greater influence on the odds of unrest in democratic states compared to the more-autocratic counterparts.[15] Similarly, citizens' trust in government likely conditions their willingness to tolerate restrictions on their lives and threats to their material well-being. High levels of faith in government would be expected to temper the growth of grievances and thus diminish the threat of unrest. However, where trust in government is already low, citizens may view restrictions intended to mitigate the pandemic with suspicion and resentment, contributing to resistance. Previous studies suggest that suspicion of health authorities and government officials played a key role in motivating unrest in England, Russia, and elsewhere during the cholera epidemics of the nineteenth century. While we are unable to explore these moderating factors in the context of this article, they deserve scrutiny in future work.

Finally, we explicitly investigate how the severity of a policy at a given moment in time influences the frequency of unrest. Yet, these effects may vary as a function of the time since implementation and in relation to the severity of the pandemic. Citizens may tolerate temporary restrictions on rights and privileges in the face of emerging threats, which may give way to animosity and resistance if the policy persists for weeks or months. Similarly, as pandemic-related deaths mount, citizens may (temporarily) accept restrictions if they believe they are necessary means of managing the threat. As the threat subsides, the public may demand the termination of restrictions while authorities adopt a more cautious stance. Divergence between citizens' and officials' perceptions of threat may exacerbate grievances that spur unrest, provided sufficient opportunities for mobilization exist.

Supplementary Information

Supplementary information is available in the *International Studies Quarterly* data archive.

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[15] We explore this possibility in our online supplementary appendix (table A9; figure A1).

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