

# Policy integration, problem-solving, and the coronavirus disease crisis: lessons for policy design

Martino Maggetti and Philipp Trein

Institute of Political Studies, University of Lausanne, Lausanne, Switzerland

Corresponding author: P. Trein, University of Lausanne, Géopolis 4126, Lausanne 1015, Switzerland.

Email: [josefphilipp.trein@unil.ch](mailto:josefphilipp.trein@unil.ch)

We thank Nicole Lemke for her valuable support with the data analysis. We are grateful to the editors of this issue and the journal as well as to two anonymous reviewers for their comments that helped to improve this paper considerably.

## Abstract

The coronavirus disease pandemic has exposed differences in the capacity of governments around the world to integrate and coordinate different policy instruments into a coherent response. In this article, we conceptualize and empirically examine policy integration in responses to the coronavirus disease crisis in 35 countries. We then discuss how the interplay between restrictions, health protection, and economic policy has been articulated between, on the one hand, a policy design based on the complementarity of pro-public health and pro-economy measures, implying an integrated response, and, on the other, a policy design based on the perception of an inherent trade-off between the two. Finally, we discuss three implications from our analysis of policy integration against the coronavirus disease crisis for the post-COVID state: (a) the normalization and adaptation of integrated crisis responses; (b) the possible acceleration and “catching up” of problem-solving capacity as governments may use the crisis as an instance to put into place new social policies; and (c) policy integration as an accelerator of policy complexity and resistance against technocracy in the post-COVID state.

**Keywords:** health policy, economic policy, policy capacity, crisis management

Massive crises, such as the coronavirus disease pandemic, require encompassing policy responses integrating different policy goals and instruments (Ansell et al., 2010, 2020). However, these large-scale crises also magnify coordination problems within and across levels of governance, so that policymakers may have a hard time to develop coherent policy responses. Up to now, scholars have shown that governments around the world differ markedly in their policy responses to the coronavirus disease pandemic, but we lack an appreciation of how they managed to coordinate and integrate their policy goals and instruments (Bouckaert et al., 2020; Capano et al., 2020; Hale et al., 2021). Examining how policymakers created different policy mixes is nonetheless important, as it allows us to draw some broader lessons for the problem-solving capacity of governments in the post-COVID state, characterized not only by a larger, more interventionist public sector, but also by a new era of political polarization.

In this article, we hark back to the literatures on policy integration (Tosun & Lang, 2017), policy coordination (Peters, 2015), crisis governance (Ansell et al., 2020), and policy mixes (Howlett & Rayner, 2007), so as to outline how governments developed a more or less coherent strategy against the coronavirus

disease pandemic by coordinating different policy sectors and integrating several policy goals. We then discuss the implications for the post-COVID state.

Therefore, we proceed in two steps. Firstly, we conceptualize policy integration with respect to the combination of three policy instruments that are adopted to fight the coronavirus disease pandemic: (a) restrictions, e.g., rules and regulations for individuals and collective actors; (b) investments that address the direct effects of the policy problem; and (c) investments that deal with some of the secondary effects of the policy problem and the consequences of the regulatory measures employed to address that problem. We define eight ideal-typical varieties of policy integration that articulate the mixing of these three types of instruments in the conduct of public policies. To empirically illustrate these varieties, we use an existing dataset (Hale et al., 2021) to engage in the descriptive analysis (Gerring, 2012) of policy integration during the coronavirus disease crisis in developed democracies.

In the second part of this article, we explore the link between policy integration and problem-solving, i.e., we ask the question of how integrated policy programs could affect the outcome of anti-crisis measures. To this aim, we approach problem-solving from a processual perspective, that is, by considering “problem-solving as a decision-making style” (Elgström & Christer, 2000). Instead, the identification of a causal relationship between policy integration and performance indicators related to the management of the pandemic is beyond the scope of our research. What is more, we acknowledge that policy successes or failures are politically constructed events that are usually shaped by blame games (Bovens et al., 2002); as such, they would necessitate a comprehensive assessment and require some distance in time to be studied more objectively.

In using the insights from our descriptive analysis we argue that policymakers integrate health and economic policies according to two opposite policy designs (to be understood as two extreme poles of a continuum rather than as a strict dichotomy): on the one hand, a policy mix based on the complementarity of pro-public health and pro-economy measures, implying a policy integrated response; and, on the other, a policy design based on the perception of an inherent trade-off between the two. Deciding a timely lockdown followed by a rapid mitigation strategy and controlled reopening is an example of the complementarity design. The pursuit of “herd immunity” without, or with delayed, constraining measures to sustain the economy, or, on the contrary, the enactment of strict lockdowns and curfews without an explicit economic strategy both illustrate the trade-off design. Countries vary regarding their ability to integrate different public policies against the crisis. Due to the nature of the coronavirus disease pandemic as a mega crisis, problem-solving through policy integration mainly proceeds through experimentalist governance, which is applied when policymakers are confronted with a novel problem in a context of high uncertainty. In that regard, we suggest that governments that can learn from past experiences or that have the capacity to learn from experiences abroad have also better chances to come up with a successful problem-solving approach based on policy integration.

Finally, we expose the implications of policy integration during the coronavirus disease crisis for the post-COVID state. Our results suggest that the capacity to integrate different public policy instruments in a coherent way contributes to a wide-ranging problem-solving capacity of governments regarding other complex problems, such as climate change. Nevertheless, policy integration alone is not sufficient. Policymakers also need to ensure a timely policy response. Concerning the dynamics of policy change in the post-Covid state—normalization, adaptation, and acceleration—our analysis of policy integration points to three specific implications regarding: (1) the normalization and adaptation of integrated crisis responses; (2) the possible acceleration and “catching up” of problem-solving capacity as governments may use the crisis as an instance to put into place new social policies; and (3) policy integration as an accelerator of policy complexity and resistance against technocracy in the post-COVID state.

## Substantial policy integration in the coronavirus disease crisis

We define policy integration as the combination of policy goals and policy instruments from different policy sectors into a single policy program (Trein & Maggetti, 2020). Such an integrated program is configured as a policy mix that cuts horizontally and vertically across different policy sectors (Howlett & Pablo, 2015; Howlett & Rayner, 2007; Knill et al., 2021). A typical example is the inclusion of environmental sustainability policy objectives in energy policy or agricultural policy programs (Jordan & Lenschow, 2009). Therefore, we conceive policy integration as a specific type of policy mix that not only includes a variety of policy instruments (Howlett & Pablo, 2015; Kern et al., 2019) but also follows a policy design aiming at linking these policy instruments sequentially in a way that they can produce a

coherent policy response. In other words, policy integration entails the coordination of different policy elements to pave the way for increasing the coherence of the overall policy response (Cejudo & Michel, 2017; Howlett & Rayner, 2007). Some researchers have underlined the processual nature of policy integration (Candel & Biesbroek, 2016; Cejudo & Michel, 2017), whereas others have used the term to denote changes in policy design that combine different policies (Trein & Maggetti, 2020; Trein et al., 2021).

It is important to remark that policymakers purposively engage in policy integration as an instrumental way to govern societal problems, epitomizing the “puzzling” dimension of politics (Hecló, 1974). However, on the one hand, policy integration can also be permeated by “powering” strategies; and, on the other, policy integration can produce unintended policy effects. In particular, it is worth noting that policy integration does not ensure coherence; coherence should be present when the resulting policy mix includes policy goals and policy instruments that support and complement, rather than undermine one another regarding the process and results they produce (Howlett & Rayner, 2007; Trein, 2017). An integrated policy design may indeed reveal some internal incoherencies in the implementation phase or prove to be incoherent with respect to other existing policy programs.

In this article, we examine different configurations representing the building blocks of policy responses designed to deal with coronavirus disease by distinguishing between policy integration strategies. Our conceptualization of policy integration includes both the combination of different policy goals and instruments that cut across sectors and the coordination capacity of public administrations. In the wake of the coronavirus disease pandemic, policymakers faced the challenge to design a complex multilevel policy mix, wherein different policies with multiple goals (Howlett & Pablo, 2015, p. 1237) needed to be integrated, so as to provide a coherent response (Capano et al., 2020; Goyal & Howlett, 2021). Any given policy response can thus be examined with two steps: to what extent it is integrated and the degree of its coherence, in the sense of how different policy instruments complement one another. To analyze how different policies are integrated, we focus on three types of specific instruments, which policymakers applied to deal with the coronavirus disease crisis:

1. *Restrictions*: They correspond policy measures that address the policy problem through new rules and regulations imposing obligations, limitations, and prohibitions (Howlett, 2019; Lascoumes & Patrick, 2007). In the case of the policy response to coronavirus disease, they consist of travel bans, school closings, curfews, or closures of shops and events. These measures alleviate the consequences of the problem especially on the short term, but they cannot easily deal with its cause. In some instances, they could even produce negative feedback effects that might reduce public support by the affected population and interest groups (Busemeyer et al., 2021).
2. *First-order investments*: These are policy responses that rely on investments aiming to protect affected groups from the direct effects of the crisis (Howlett, 2019; Lascoumes & Patrick, 2007). In the case of the coronavirus disease crisis, they correspond to policies that entail measures to implement contact tracing, testing, as well as vaccination. Such policies typically need time to be deployed, but in addition to dealing with the consequences of the problem, these measures can also alter—and possibly reduce—the magnitude of the problem itself. Depending on their framing and legitimacy, these policies can trigger positive feedback effects by citizens and interest groups leading to policy success, or, in some cases, face resistance from some groups (Busemeyer et al., 2021).
3. *Second-order investments*: These are policies that aim at protecting the affected group from the consequences of the policy problem on their economic livelihood, as well as from the secondary economic effects of the other policy responses, especially restrictions. In the case of the coronavirus disease crisis, they consist of measures that create economic support for those who are more impacted by the pandemic and by its political management, for example through income support or debt relief. These policies can be very expensive, but they reduce the negative consequences of the problem, and they potentially create positive feedback effects, especially amongst those who benefit from them.

These policy responses can be integrated through different types of policy mixes. Existing studies on the political management of the coronavirus disease pandemic have pointed to a large variety of policy measures (Capano et al., 2020; Engler et al., 2021; Maor & Howlett, 2020; Toshkov et al., 2021), which can be subsumed under these three dimensions. However, we still lack an analysis of these policy mixes

from the perspective of policy integration. Examining the integration of restrictions, first-order and second-order investments not only elucidate variations in the political management of the coronavirus disease crisis, but also help us to understand how governments could deal with other complex policy problems in the post-COVID state, such as climate change, inequality, and poverty (Briassoulis, 2017; Cairney & Denny, 2020; Peters, 2017).

## Varieties of policy integration in the coronavirus disease crisis

To analyze how governments integrate different policy instruments during the coronavirus disease crisis, we focus on the combination of the three different types of policy instruments discussed above. The integration of restrictions, first-order investments and second-order investments can be arranged into eight configurations representing different varieties of policy integration. Each corner of the cube portrayed in Figure 1 represents an ideal-type of policy integration strategy.

1. *Limited response*. The first configuration refers to limited responses on all the three dimensions. In this instance, policymakers are likely to ignore or in any case underrate the problem, as if it will disappear by itself. In the context of the pandemic, the policy response of the federal Brazilian government and some of the rhetoric emanating from the Trump administration at the onset of the pandemic are empirical instances that come close to this ideal-type of limited policy integration.
2. *Economic-oriented compensatory support*. The second configuration entails a situation when policymakers invest mostly into shielding citizens from the economic consequences of the pandemic but refrain from using restrictions and health protection plans as much as possible. In the context of coronavirus disease, this approach is less plausible and empirically rare; nevertheless, such a policy is possible regarding other problems whose timing is slower than a pandemic.
3. *Integrated restrictions and economic-oriented compensatory support*. The third configuration combines restrictions with economic support measures, while putting less emphasis on the investment in first-order protection measures. The policy responses of governments against the coronavirus disease crisis are not very likely to evolve in this direction, as most countries have adopted some protective measures, such as contact tracing, and distribute vaccines once they are available. Nevertheless, this configuration could occur when protection policies are not yet possible, for example due to a shortage of the required products or devices or due to technical limitations.

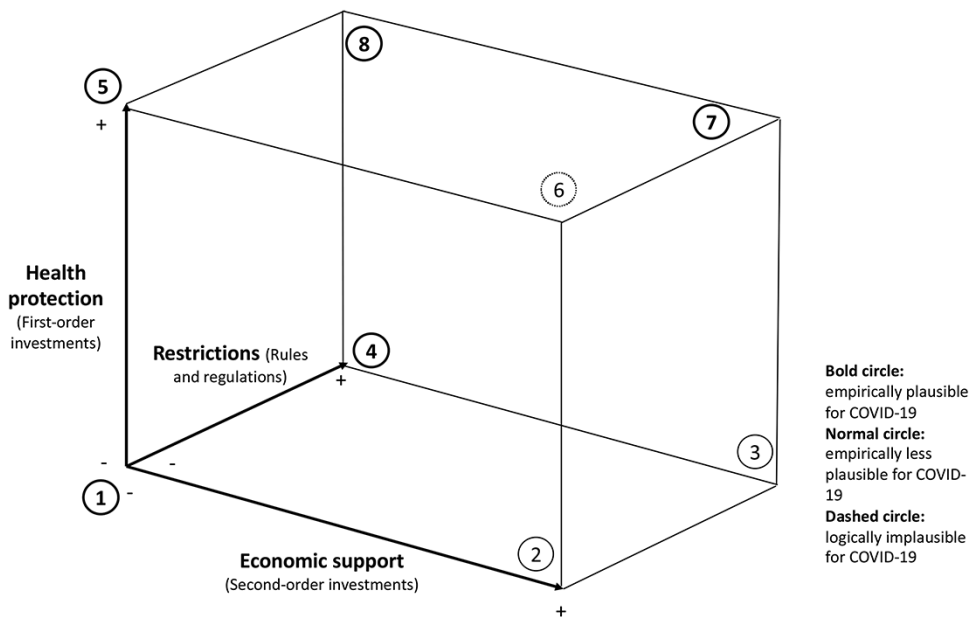


Figure 1. Varieties of policy integration.

4. *Restriction-oriented response.* In this case, the policy strategy entails a response that mostly focuses on restrictions and avoids investing in protection. Such a policy response is plausible specifically when only few resources are available and policymakers lack the funds to invest in protection plans. We can expect to find this type of policy integration in the context of an authoritarian government in a deprived country.
5. *Health-oriented compensatory support.* This variety of policy integration emphasizes investments in measures protecting the population from the primary source of the problem itself, that is, SARS-CoV-2 infections in the context of the coronavirus disease pandemic. Such measures include contact tracing, testing, and vaccination. At the same time, this policy strategy involves few restrictions. Thereby, it is likely to be enacted specifically once vaccines—and thereby some level of collective immunity—are widely available.
6. *Integrated economic and health protection support.* This variety of policy integration centers on the combination of investments into health protection and compensation from some of the economic consequences of the pandemic. This ideal type is quite unlikely for the coronavirus disease crisis as health protection measures are typically assorted with some restrictions. What is more, economic support is less needed when restrictions are released and measures for ensuring health protection become available. Nevertheless, this configuration of policy integration is plausible if policymakers strive to avoid restrictions as much as possible. This may occur especially when powerful interest groups opposing restrictions can veto this type of policy response.
7. *Comprehensive policy integration.* The seventh configuration combines restrictions with health protection measures and with policies that deal with the direct economic consequences of the crisis as well as with the secondary effects of other policy measures.
8. *Integrated restrictions and health-oriented compensatory support.* According to this variety of policy integration, policymakers combine stringent restrictions with high levels of investment to protect the population from the main cause of the crisis, that is, SARS-CoV-2 infections in the case of the coronavirus disease pandemic. Economic protection measures are of limited importance in this context.

These policy integration configurations provide an ideal-typical analytical space for assessing how policymakers can integrate different policy responses, such as those geared towards the coronavirus disease crisis, but they can also be applied to other policy problems. For example, the combination of restrictions and investments is also pertinent for tackling climate change, whose political management requires to integrate different instruments such as regulations and constraints as well as investments into new technologies that contribute to reduce carbon emissions (Milhorance et al., 2020).

## Empirical analysis of policy integration in the coronavirus disease crisis

In the following section, we take a systematic descriptive look at empirical data to identify the above-discussed integration of policy responses. The coronavirus disease pandemic, as a major crisis defining our era, has immediately triggered several research projects that have embarked on comparing policy responses by governments around the world (Cheng et al., 2020; Hale et al., 2021). We take the early availability of this data as an opportunity to illustrate our theoretical reflections. We mostly rely on data from the coronavirus disease Government Response Tracker (Hale et al., 2021). This data is particularly suitable for our purposes as it provides information about a variety of policy responses geared towards restrictions, first-order investments (health protection measures), as well as second-order investments (economic support measures). The dataset contains different indicators combining various policy instruments, but it also offers information regarding specific policy measures. We use the variables on policy instruments to operationalize the scope of policy integration regarding responses against the coronavirus disease pandemic. The dataset counts the presence of a policy response on each day from 1 January 2020 until 9 May 2021. The coding of variables measuring restrictions varies from “0” (no policy) up to “3” or “4” (very restrictive policies). The variables regarding economic support are also coded by an ordinal scale (e.g., from “0” representing no income support to “2” the government replaces more than 50% of the median salary). Some of the policy instruments that we include in the economic support dimension measure investment in US dollars (USD). Variables operationalizing

investment in protective measures are also measured on an ordinary scale as well as in USD regarding investments in health care and vaccines. To compare variables measuring announced investments in USD, we weigh the values of the variable by the size of the population. To improve the comparability of the different variables considered in our study, we normalized them at two standard deviations (for more details regarding the coding, cf. [Hale et al., 2021](#)).<sup>1</sup>

We use the factor analysis command in Stata with a principal component factor analysis to examine the correlation between the different policy responses to the coronavirus disease crisis. Specifically, we estimate three factor analyses. The first one entails variables that measure restrictions regarding liberties. Notably, we include variables measuring: the closing of schools, the closing of workplace, the cancelling of public events, the restriction of gatherings, the closure of public transports, the presence of stay-at-home requirements, restrictions of internal movements, and international travel controls. The results of a rotated principal component factor analysis result in one factor with loadings for each of the variables (cf. Supplementary Table S1 in the Supplementary materials for details).

The second factor analysis focuses on first-order-investments regarding the crisis. These are policies that promote investments to protect individuals from the direct effects of the pandemic. The data contains the following variables to measure the policy response on this dimension: public information campaigns, testing policy, contact tracing, emergency investment in health care, investment in vaccines, facial coverings policy, vaccination policy, and protection of elderly people. The results of the rotated principal component factor analysis show three factors. All variables load well on the first factor except emergency investment in health care and investments in vaccines, which only happened in a few instances (cf. Supplementary Table S2 in the Supplementary materials for details).

The third factor analysis focuses on second-order-investments that mostly aim at dealing with the economic consequences of the pandemic and the restrictive anti-coronavirus disease policies. The dataset includes four variables that can be used to measure policy integration along this dimension as a policy response against the coronavirus disease crisis: income support, debt contract relief for households, fiscal (stimulus) measures, and international support. The results of the rotated principal component analysis show two factors. Amongst the variables included in the analysis, income support and debt relief load on the first factor, whereas fiscal measures and international support load on the second factor (cf. Supplementary Table S3 in the Supplementary materials for details). These results seem plausible, as governments rely on these measures with different priorities, whereby income support and debt contract relief policies are typically more substantial than fiscal relief and international support measures.

To assess policy integration along the three types of policy responses—restrictions, first-order investments, and second-order investments—we conduct another factor analysis, which uses the predictions of the first factor for each of the three analyses as measures for the types of policies. The results of this factor analysis indicate that all three measures load on one single factor (see Supplementary materials, Supplementary Table S4).

Overall, it is plausible to assume that the co-occurrence of different restrictions as well as investments is an indication of encompassing policy integration. Nevertheless, it is important to point out that this operationalization of policy integration focuses on specific policy goals that are part of a broader policy program enacted on the short term to deal with a large-scale crisis, i.e., in the immediate aftermath of the coronavirus disease pandemic. However, sometimes the three types of policies are formally joined in one single piece of legislation. Some countries, such as Switzerland, have a specific law that combines the different pieces of secondary legislation (ordonnances) that the federal government put in place at the onset of the pandemic, including restrictions and economic measures ([Heidelberger & Schneuwly, 2021](#)). Other countries, such as Germany, have several, formally separated laws that respond to the different problems of the pandemic.<sup>2</sup> Nevertheless, when different laws entail substantive and restrictions and, respectively, more investments, policy integration can still be considered as encompassing. This analytical choice is suitable in the context of a pandemic, which in principle requires a fast and comprehensive policy response.

<sup>1</sup> The list of variables can be found here: <https://github.com/OxCGRT/covid-policy-tracker/blob/master/documentation/codebook.md>, accessed on 29 September 2021. We use the variables regarding containment and closure policies to measure “regulations,” economic policies to measure “economic support,” and health systems and vaccination policies, to measure “health protection.”

<sup>2</sup> [Dejure.org: https://dejure.org/corona-pandemie](https://dejure.org/corona-pandemie), accessed on 18 July 2021.

To present the results of the factor analyses, we focus on a selection of Organization for Economic Cooperation and Development (OECD) countries with different politico-administrative systems as well as a few nondemocratic countries that are politically stable and economically developed (e.g., China, Singapore, and the United Arab Emirates). We examine the integration of policy responses related to restrictions, first-order, and second-order investments by plotting how the countries score in these dimensions on a three-dimensional plot. Firstly, we look at the maximum value for the factor analysis that combines all the three types of policy instruments per country into an integrated policy response. This measure provides insights on the capacity to put into place the different policies at the same time. Secondly, we observe the average value for policy integration for each country. This measure provides us with insights on how long policies have been in place, especially restrictions on individual freedoms, which governments tend to remove rapidly once infection rates decrease.

The results show that there are considerable differences between countries regarding the maximum value taken by the variables, which indicates to what extent governments are willing to integrate the three types of policies as a response to the coronavirus disease pandemic. Some countries, such as the USA, Germany, and Italy show high maximum values for policy integration, in the sense that they adopt high levels of restrictions, many investments for protecting the population, as well as some level of income replacement at the same time. Switzerland is a case where the policy mix rather focuses on investments to protect the population. In Greece, restrictions as well as income replacement measure score high compared to other countries. Scandinavian countries are similar insofar as they all have limited levels of restrictions. Nevertheless, they differ in the emphasis on investments. Norway invests especially in protecting the population from the pandemic, Denmark created generous income replacement possibilities, whereas in Sweden and Finland the overall policy response was more limited (Figure 2).

To deepen our analysis of policy integration, we also need to consider the mean value for the policy mix over the period covered by the analysis (January 2020 to May 2021). This piece of information refers to the duration of the policy; it also indicates whether restrictions and investment measures were considered as complementary, and therefore jointly contributed to reducing the impact of the pandemic, or whether policymakers assumed a trade-off between the various policies. In this latter case, governments typically had to impose much more restrictive measures to deal with excessive caseloads and consequent pressures on the hospital system (Figure 3).

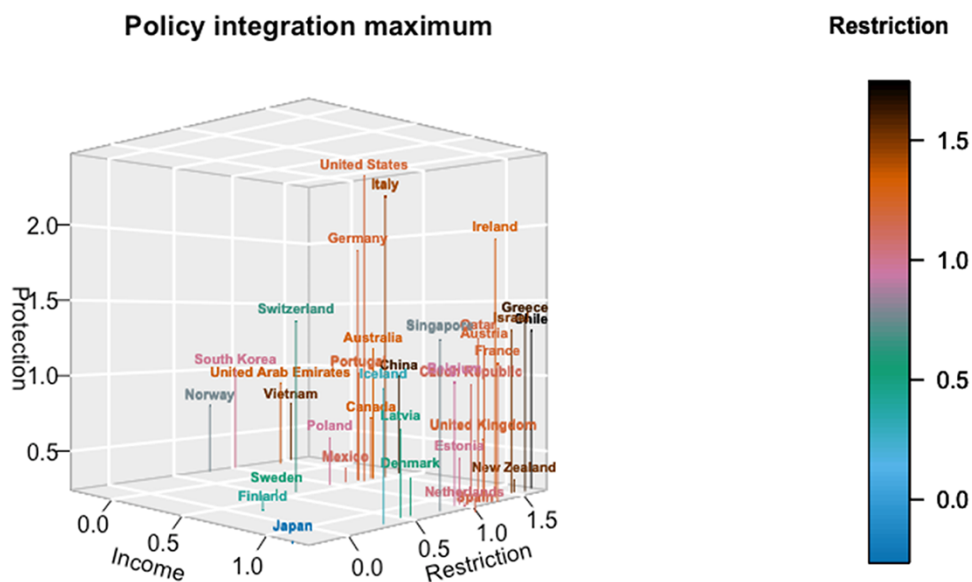
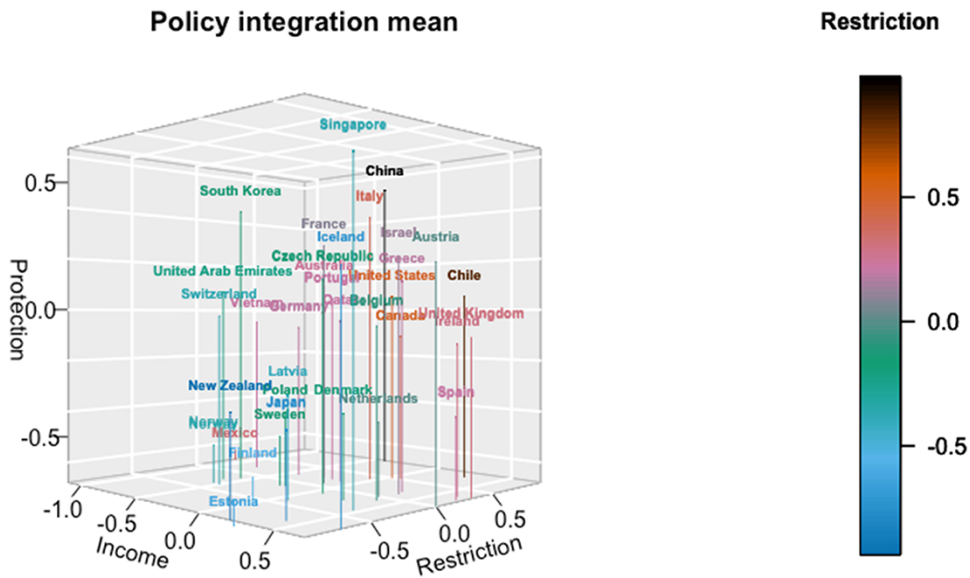


Figure 2. Maximum value for policy integration during the coronavirus disease crisis.



**Figure 3.** Average value for policy integration during the coronavirus disease crisis.

The results of our analysis show that some governments implemented a policy mix that integrated severe restrictions with the other two dimensions. This is especially the case in China. Amongst democratic states, Greece, Italy as well as the USA (as for the competencies of the federal government) maintained, on average, some severe restrictions as part of the policy mix. In South Korea and Singapore, investment in health protection is the dominant element of the policy mix. Iceland is a case where investment in health protection as well as income replacement dominate the policy mix and restrictions are rather low.

The results of this analysis underline that policy integration varies between countries, and the descriptive results suggest that this variation is not necessarily related to the type of political system or to administrative traditions. For example, the UK and the USA show rather high levels of policy integration (Figure 2, Figure 3). In both countries, the Conservative and Republican governments tried at first to respond to the pandemic through limited responses as they delayed the imposition of restrictions (Cairney, 2021; Rocco, Béland, Waddan, 2020). This temporal mismatch derived from the perception of a trade-off between restrictions—namely lockdowns—and economic support measures. Consequently, restrictive regulations and more investments were needed at a later stage, and they also remained in place for a longer time (Figures 2 and 3).

## Policy integration and problem-solving capacity

### Reaction time and coherence of policy integration

The abovementioned descriptive analysis points to differences and similarities between countries. To interpret these results, we need to look at problem-solving capacity of governments through policy integration in a more general sense. Therefore, we return to the distinction between different policy integration designs. We have argued that, on the one hand, governments can design a strongly integrated policy response that relies on a strategy based on the combination of pro-public health (restrictions, such as lockdowns, but also health protection, e.g., contact tracing) and pro-economy measures (e.g., extended income support). According to public health specialists, this latter type of policy mix is more successful in reducing the impact of the coronavirus disease crisis (Oliu-Barton et al., 2021). Conversely, a policy design based on the perception of a trade-off between the two involves limited integration. In this context, policymakers assume that the two measures create policy conflicts rather than complementarities, which might result in a delayed and/or incoherent crisis response (Capano, 2020; Rocco et al., 2020). Therefore, policymakers strive to avoid restrictions, such



**Table 1.** Policy integration, reactivity, and coherence.

	Slow capacity to react	Fast capacity to react
Limited coherence of policy integration	Ineffective problem-solving capacity (Brazil)	Fragmented problem-solving capacity (Sweden/Japan)
High coherence of policy integration	Delayed problem-solving capacity (UK)	Wide-ranging problem-solving capacity (Denmark)

as lockdowns, typically when they have an ideological preference to avoid the negative economic consequences of such measures in the short term. The same holds for investments into health protection policies, which might either be perceived as obstructing or protecting economic activity. Accordingly, we can distinguish between high versus limited coherence of policy integration.

Another important dimension for understanding problem-solving capacity through policy integration concerns the timing of the policy response, which could be either fast or slow. In combining these two analytical dimensions, we can distinguish four types of problem-solving processes regarding policy integration strategies in the context of the coronavirus disease crisis. The first one combines limited integration with a slow reaction to the crisis. The second type refers to more encompassing policy integration but with a timing that is out of tune with respect to the temporality of the crisis. The third consists of a quick response that is however weakly integrated. The fourth covers instances of encompassing responses that are also timely (Table 1).

However, it is difficult for policymakers to enact measures that maximize these two qualities simultaneously. Especially in a context of high uncertainty, such as that experienced in the first months of 2020 when the pandemic escalated, policymakers are confronted to hard choices (Boin et al., 2016). A trade-off emerges between quick reactions and the time needed for devising a coherent policy integration strategy. Policymakers may have to choose between a slower but more coherent or a faster but only partial or less coherent reaction, namely—but not only—when policy capacity is limited due to weak institutional capacity (Blomquist & Ostrom, 1985; Wu et al., 2015).

To provide some examples for the above cited four types of problem-solving capacity, we will now contrast Sweden and Denmark, where governments reacted quickly to the pandemic, but with varying degrees of coherence between the policy responses across the three dimensions of policy integration. This comparison is also interesting because these countries are rather similar regarding potentially intervening variables, such as quality of government and the decentralization of the health system. In Denmark, the government did not only react fast to the pandemic but also in an encompassing manner that combined different dimensions of policies quite coherently, resulting in wide-ranging problem-solving capacity (Vrangbaek & Pedersen, 2020). In Sweden, the government imposed less restrictions of economic and social life, which resulted in fragmented problem-solving, whereby those who are particularly vulnerable to the pandemic have been deeply affected (Andersen et al., 2020; Pierre, 2020). As the other examples—that we cannot fully develop for lack of space—indicate (Brazil with respect to potentially ineffective problem-solving capacity, and UK concerning delayed problem-solving capacity), a further empirical elaboration would require considering the role of the politicization of expertise, populism, and decentralization, which all play an important role in problem-solving processes through policy integration.

## Learning and experimental governance

Another element is central for understanding the link between policy integration and problem-solving. The governance of complex and fast-moving policy problems, such as the coronavirus disease pandemic, typically proceeds in an experimentalist manner, that is, by back and forth and trial and error (Grainne et al., 2014; Sabel, 2012; Sabel & Zeitlin, 2008). This form of governance is specifically likely to emerge in times of crisis, especially when policymakers are required to develop measures that fall outside of existing policy models and blueprints, and whose implementation takes place within a variety of policy contexts (Ansell et al., 2020; Zeitlin, 2016). As anticipated, we do not engage in causal analysis, as this article is geared towards theory-building based on descriptive analysis. Nonetheless, we can reflect upon some factors that might account for variation in policy integration across countries.

Why did some countries adopt timelier and/or more coherent policy integrated responses? Our descriptive analysis has shown that macro-institutional variables do not determine a clear pattern of policy responses, as there is considerable cross-country variation and the clusters aggregate countries with disparate political systems. Therefore, we propose that some key policy-specific factors can possibly enhance the compatibility between the coherence of policy integration and a timely response, notably referring to the opportunities for “policy learning.”

Accordingly, the development of a quick and at the same time coherent policy integration strategy as a response to such a large-scale crisis is likely to be facilitated by *three distinct types of policy learning processes*. The first one is about *prior experiences*, whereby policymakers can fruitfully learn from their policy successes or failures in the past (May, 1992). In the case of the coronavirus disease pandemic, prior experiences with similar epidemics—for instance the severe acute respiratory syndrome (SARS) epidemic of 2002–2004 in Taiwan—have been instrumental for providing a blueprint to policymakers and reduce uncertainty (Jason et al., 2020). The second type of learning process involves adopting policies that have been *successfully implemented in other, relevant jurisdictions*, establishing a trajectory of policy diffusion (Braun & Gilardi, 2006). This type of learning requires channels for diffusion, for instance through transnational networks and multilateral international institutions (Biesenbender & Tosun, 2014). The most powerful and well-connected countries are thus more likely to benefit from these processes (e.g., the USA), if the adoption of lessons from abroad is not hampered by domestic politics (Gilardi, 2010). In the case of the coronavirus disease pandemic, this implies that learning occurs from entities where the adopted policies helped to reduce the pandemic, for example from countries that have previously dealt with such a problem. The third process consists of *learning from policy failure*. In this case, the government changes the policy mix due to its failure to address the policy problem during the crisis. For example, the Swedish government waited with the implementation of regulations and restrictions longer than in other countries but then it implemented more restrictive policies once it realized that caseloads could not be reduced without intervening into individual and economic liberties. A learning process took place insofar as the government realized a policy change was needed to deal with the coronavirus disease crisis (Maggetti, 2020; Pierre, 2020).

## Theoretical lessons for the post-COVID state

This article contributes to our understanding of the post-COVID state in different ways. To begin with, the introduction to special issue has outlined three mechanisms that could be constitutive of potential post-COVID policy trajectories: normalization, adaptation, and acceleration. Normalization entails that the policy ideas developed during the crisis become part of existing policy practices. Adaptation occurs when pre-crisis policies are adapted to the context of the crisis. Acceleration implies the speeding up of policy-related ideas that existed in their infancy prior to the crisis (Capano et al., 2021). Our analysis of policy integration points to the following open-ended theoretical lessons for these dynamics of public policy in the post-COVID state.

### Normalization and adaptation of integrated crisis responses?

The post-COVID state may entail the normalization and adaptation of policy integrated responses. Regarding normalization, this implies for example that new public health policies which were developed during the crisis will become a more important part of the health policy portfolio. For example, governments will not only have plans for the ensuring their preparedness in case of pandemics but also might mobilize more resources and capacities to be ready for action. Such efforts might entail not only training activities and the provision of material and personnel, but also an increased coordination of pandemic responses between jurisdictions at the national and the international levels of government. Concerning adaptation, we might observe that new, cross-sectoral policy mixes could characterize policymaking in the existing policy fields are adapted for a pandemic context, for example by integrating public health-related concerns into transport or migration policy. Regarding economic and labor market policy, such measures entail providing or adapting the capacity to support the economy, in coordination with the policies responding to the health crisis.

More broadly speaking, policy integration regarding the coronavirus disease crisis can induce a more general normalization and adaptation of integrated responses so as to ensure the capacity to provide a whole-of-government approach for the governance of other problems, such as in addressing the consequences related to climate change. This implies that hopefully governments may learn from the

coronavirus disease crisis how to combat future pandemics, but they could also transfer lessons from this crisis to other complex policy problems in different policy fields.

Nevertheless, the extent to which normalization and/or adaptation will actually occur, and how, requires further empirical research to be carried out over the coming years, and it needs to be tested in future crises. This is all the more important, since crisis response capacity is often contingent on temporality. It is indeed reasonable to expect that as time passes after a crisis event, governments decide to cut back response capacities, which also allow to integrate and coordinate different policy instruments. In case of scarce resources in the public sector and shortsighted policymaking, the disintegration of policy mixes could be witnessed. Furthermore, policy reversion is possible because some of the anti-crisis policies entailed temporal power shifts, which are legally and politically acceptable only in the context of a crisis (Boin et al., 2016; Braun & Trein, 2014).

### Acceleration and “catching up” of problem-solving capacity?

The analysis of policy integration during the coronavirus disease crisis could also indicate the possible acceleration of the problem-solving capacity of the state through public policies in the post-COVID state. Some of the countries that show high maximum levels of policy integration, such as the USA (Figure 1), might use integrated policy responses to the coronavirus disease crisis to catch up with some policy instruments that other countries have put into place earlier. This implies that policy integration in the wake of the COVID could also mean a more general increase of the protective state and the corresponding expansion of social policies. Such an expansion would operate not only through investments, for example regarding health care capacities and personnel in the health sector, but also through new regulatory measures, including new market regulations and rules to steer individual behavior and promote general welfare-oriented goals (Ansell, 2019; Levi-Faur, 2014).

### Acceleration of policy complexity and resistance against technocracy?

Policy integration in the context of the coronavirus disease pandemic might have another more broader consequence for the post-COVID state. The policy measures against the crisis and their integration could increase the complexity of public policies and reinforce the dynamic of policy accumulation. In other words, rules, first-order and second-order investments enacted to fight the pandemic might pile up as additional layers on existing public policies, complicating policymaking even more, and, thereby, further increase the demands for integrating and coordinating different policies across sectors. This should be especially the case when different elements of a policy mix constituting the policy response against the coronavirus disease crisis are incoherently integrated (Adam et al., 2018). At the same time, policy integrated responses to the pandemic could be perceived by some political parties and societal groups as the manifestation of a “policy state” (Orren & Skowronek, 2017), which would extend public policies at the expense of individuals rights. For example, requirements regarding mask wearing or the electronic proof of vaccination could be interpreted as an encroachment upon individual liberties.

Therefore, policy integration under the coronavirus disease crisis might further fuel resistance against a “technocratic state” in the post-COVID era. Although many citizens are generally favorable to the inclusion of experts in policymaking (Bertsou & Caramani, *in press*), the coronavirus disease pandemic has shown that sustained crisis responses can provide momentum to political opposition against new social regulations. Integrated policy strategies, which touch upon many different policy sectors as they aim at comprehensiveness, might inadvertently strengthen such tendencies, e.g., they could reinforce political opposition against vaccines and against the use of information technologies to contain the pandemic (Debus & Tosun, 2021).

## Conclusions

In this article, we have examined how policy integration can contribute to problem-solving in the context of the coronavirus disease crisis. We started our analysis by identifying three policy dimensions that characterize integrated policy strategies to deal with the pandemic: restrictions, investments for health protection, and economic protection measures. In using the insights from a comparative dataset that assesses policy responses to the coronavirus disease crisis, we illustrate how different countries integrate these three types of policies to deal with the pandemic. After this descriptive analysis, we suggest that policy integration is more likely to contribute to problem-solving when it is also coherent and timely. However, governments may face a trade-off as the pursuit of policy coherence and the

rapidity of the policy response can be at odds. Some factors can favor the compatibility between these two features, namely those related to policy learning.

From our analysis of policy integration, we also have discussed three open-ended theoretical lessons for the dynamics of public policy in the post-COVID state. Firstly, the post-COVID state might entail a normalization and adaptation of integrated crisis responses, because policymakers could transfer the policy strategies used during this crisis to their more general approach to the governance of problems. Secondly, in the post-COVID period we might witness an acceleration and “catching up” of problem-solving capacity as governments can use the crisis as an opportunity to put into place new social policies and widen the scope of the welfare state. Thirdly, policy integration might unintentionally fuel the acceleration of policy complexity and, respectively, the resistance against technocracy in the post-COVID state. If and how these dynamics will appear must however be investigated by future empirical research.

Nonetheless, it is worth noting that in the post-COVID state, which is expected to be more interventionist but also swept by with new cleavages, policy learning (Vagionaki & Trein, 2020) comes out as an even more crucial feature for policymaking. On the one hand, policymakers in the post-COVID state need to learn from previous experiences and from the experience of others to deal with the growing complexity of devising policy integrated responses. However, on the other hand, policy learning might also become more demanding, in the light of the increasing polarization and contestation of legitimate expertise. Ultimately, this article provides an analytical tool for researchers based on lessons from the way governments responded to coronavirus disease, which can be generalized to some extent and transferred to the understanding of the political management of other large-scale policy problems. For example, similar varieties of policy integration strategies are pertinent for dealing with the challenges stemming from climate change.

## Supplementary material

Supplementary material is available online at *Policy and Society* (<http://mtp.oxfordjournals.org/>).

## Conflict of interest

None declared.

## References

- Adam, C., Steinebach, Y., & Knill, C. (2018). Neglected challenges to evidence-based policy-making: The problem of policy accumulation. *Policy Sciences*, 51(3), 269–290.
- Andersen, A. L., Hansen, E. T., Johannesen, N., & Sheridan, A. (2020). Pandemic, shutdown and consumer spending: Lessons from Scandinavian policy responses to COVID-19. arXiv:2005.04630 [Econ, Q-fin]. <http://arxiv.org/abs/2005.04630>, September 30, 2021.
- Ansell, C. (2019). *The protective state*. (1st ed.). Cambridge University Press. December 9, 2019. <https://www.cambridge.org/core/product/identifier/9781108667081/type/element>.
- Ansell, C., Boin, A., & Keller, A. (2010). Managing transboundary crises: Identifying the building blocks of an effective response system. *Journal of Contingencies and Crisis Management*, 18(4), 195–207.
- Ansell, C., Sørensen, E., & Torfing, J. (2020). The COVID-19 pandemic as a game changer for public administration and leadership? The need for robust governance responses to turbulent problems. *Public Management Review*, 0(0), 1–12.
- Bertsou, E., & Caramani, D. (in press). People haven't had enough of experts: Technocratic attitudes among citizens in nine European democracies. *American Journal of Political Science*. Retrieved October 1, 2021, from <https://onlinelibrary.wiley.com/doi/abs/10.1111/ajps.12554>.
- Biesenbender, S., & Tosun, J. (2014). Domestic politics and the diffusion of international policy innovations: How does accommodation happen? *Global Environmental Change*, 29, 424–433.
- Blomquist, W., & Ostrom, E. (1985). Institutional capacity and the resolution of a commons dilemma. *Review of Policy Research*, 5(2), 383–394.
- Boin, A., 't Hart, P., Stern, E., & Sundelius, B. (2016). *The politics of crisis management: Public leadership under pressure* (2nd ed.). Cambridge University Press.
- Bouckaert, G., Galli, D., Kuhlmann, S., Reiter, R., & Van Hecke, S. (2020). European coronationalism? A hot spot governing a pandemic crisis. *Public Administration Review*, 80(5), 765–773.

- Bovens, M., 't Hart, P., & Peters, B. G. (Eds.). (2002). *Success and failure in public governance: A comparative analysis*. Edward Elgar Publishing.
- Braun, D., & Gilardi, F. (2006). Taking 'Galton's problem' seriously: Towards a theory of policy diffusion. *Journal of Theoretical Politics*, 18(3), 298–322.
- Braun, D., & Trein, P. (2014). Federal dynamics in times of economic and financial crisis. *European Journal of Political Research*, 53(4), 803–821.
- Briassoulis, H. (Ed.). (2017). *Policy integration for complex environmental problems: The example of mediterranean desertification*. Routledge.
- Busemeyer, M. R., Abrassart, A., & Nezi, R. (2021). Beyond positive and negative: New perspectives on feedback effects in public opinion on the welfare state. *British Journal of Political Science*, 51(1), 137–162.
- Cairney, P. (2021). The UK government's COVID-19 policy: Assessing evidence-informed policy analysis in real time. *British Politics*, 16(1), 90–116.
- Cairney, P., & Denny, E. S. (2020). Prevention policy as the ultimate 'wicked' problem. In Cairney, P., & Denny, E. S. (Eds.). *Why isn't government policy more preventative?* (pp. 1–26). Oxford University Press. Retrieved April 24, 2020, from <http://www.oxfordscholarship.com/view/10.1093/oso/9780198793298.001.0001/oso-9780198793298-chapter-1>.
- Candel, J. J. L., & Biesbroek, R. (2016). Toward a processual understanding of policy integration. *Policy Sciences*, 49(3), 211–231.
- Capano, G., Howlett, M., Jarvis, D. S., Ramesh, M., & Goyal, N. (2020). Mobilizing policy (in) capacity to fight COVID-19: Understanding variations in state responses. *Policy and Society*, 39(3), 285–308.
- Capano, G. (2020). Policy design and state capacity in the COVID-19 emergency in Italy: If you are not prepared for the (un)expected, you can be only what you already are. *Policy and Society*, 39(3), 326–344.
- Capano, G., Michael Howlett, D. S., Jarvis, L., & Ramesh, M. (2021). Long-term policy impacts of the coronavirus: Normalisation, adaptation and acceleration in the post-covid state. *Policy and Society*.
- Cejudo, G. M., & Michel, C. L. (2017). Addressing fragmented government action: Coordination, coherence, and integration. *Policy Sciences*, 50(4), 745–767.
- Cheng, C., Barceló, J., Hartnett, A. S., Kubinec, R., & Messerschmidt, L. (2020). COVID-19 government response event dataset (CoronNet v.1.0). *Nature Human Behaviour*, 4(7), 756–768.
- Debus, M., & Tosun, J. (2021). Political ideology and vaccination willingness: Implications for policy design. *Policy Sciences*, 54(3), 477–491.
- Elgström, O., & Christer, J. (2000). Negotiation in the European Union: Bargaining or problem-solving? *Journal of European Public Policy*, 7(5), 684–704.
- Engler, S., Brunner, P., Loviat, R., Abou-Chadi, T., Leemann, L., Glaser, A., & Kübler, D. (2021). Democracy in times of the pandemic: Explaining the variation of COVID-19 policies across European democracies. *West European Politics*, 44(5–6), 1077–1102.
- Gerring, J. (2012). Mere description. *British Journal of Political Science*, 42(4), 721–746.
- Gilardi, F. (2010). Who learns from what in policy diffusion processes? *American Journal of Political Science*, 54(3), 650–666.
- Goyal, N., & Howlett, M. (2021). 'Measuring the mix' of policy responses to COVID-19: Comparative policy analysis using topic modelling. *Journal of Comparative Policy Analysis: Research and Practice*, 23(2), 250–261.
- Grainne, D. B., Keohane, R. O., & Sabel, C. F. (2014). Global experimentalist governance. *British Journal of Political Science*, 44(3), 477–486.
- Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., & Tatlow, H. (2021). *Variation in government responses to COVID-19*. University of Oxford.
- Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., & Tatlow, H. (2021). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour*, 5(4), 529–538.
- Heclo, H. (1974). *Modern social politics in Britain and Sweden: From relief to income maintenance*. Yale University Press.
- Heidelberger, A., & Schneuwly, J. (2021). Ausgewählte Beiträge Zur Schweizer Politik: Covid-19-Gesetz, 2020–2021. *Année Politique Suisse*.
- Howlett, M. (2019). *Designing public policies: Principles and instruments*. Routledge.

- Howlett, M., & Pablo, D. R. (2015). The parameters of policy portfolios: Verticality and horizontality in design spaces and their consequences for policy mix formulation. *Environment and Planning C: Government & Policy*, 33(5), 1233–1245.
- Howlett, M., & Rayner, J. (2007). Design principles for policy mixes: Cohesion and coherence in 'new governance arrangements'. *Policy and Society*, 26(4), 1–18.
- Jason, W. C., Ng, C. Y., & Brook, R. H. (2020). Response to COVID-19 in Taiwan: Big data analytics, new technology, and proactive testing. *JAMA*, 323(14), 1341–1342.
- Jordan, A., & Lenschow, A. (Eds.), (2009). *Innovation in environmental policy? Integrating the environment for sustainability*. Edward Elgar.
- Kern, F., Rogge, K. S., & Howlett, M. (2019). Policy mixes for sustainability transitions: New approaches and insights through bridging innovation and policy studies. *Research Policy*, 48(10), 103832.
- Knill, C., Steinbacher, C., & Steinebach, Y. (2021). Balancing trade-offs between policy responsiveness and effectiveness: The impact of vertical policy-process integration on policy accumulation. *Public Administration Review*, 81(1), 157–160. <https://onlinelibrary.wiley.com/doi/abs/10.1111/puar.13274>.
- Lascombes, P., & Patrick, L. G. (2007). Introduction: Understanding public policy through its instruments—From the nature of instruments to the sociology of public policy instrumentation. *Governance*, 20(1), 1–21.
- Levi-Faur, D. (2014). The welfare state: A regulatory perspective. *Public Administration*, 92(3), 599–614.
- Maggetti, M. (2020). Trust, coordination and multi-level arrangements: Lessons for a European Health Union. *European Journal of Risk Regulation*, 11(4), 790–799.
- Maor, M., & Howlett, M. (2020). Explaining variations in state COVID-19 responses: Psychological, institutional, and strategic factors in governance and public policy-making. *Policy Design and Practice*, 3(3), 228–241.
- May, P. J. (1992). Policy learning and failure. *Journal of Public Policy*, 12(4), 331–354.
- Milhorance, C., Sabourin, E., Jean-François, L. C., & Mendes, P. (2020). Unpacking the policy mix of adaptation to climate change in Brazil's semiarid region: Enabling instruments and coordination mechanisms. *Climate Policy*, 20(5), 593–608.
- Oliu-Barton, M., Pradelski, B. S. R., Aghion, P., Artus, P., Kickbusch, I., Lazarus, J. V., Sridhar, D., & Vander-slott, S. (2021). SARS-CoV-2 elimination, not mitigation, creates best outcomes for health, the economy, and civil liberties. *The Lancet*, 397(10291), P2234–2236. Retrieved May 14, 2021, from [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)00978-8/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00978-8/abstract).
- Orren, K., & Skowronek, S. (2017). *The policy state: An American predicament*. Harvard University Press.
- Peters, B. G. (2015). *Pursuing horizontal management: The politics of public sector coordination*. University Press of Kansas. Retrieved March 17, 2020, from <https://muse.jhu.edu/book/46028>.
- Peters, B. G. (2017). What is so wicked about wicked problems? A conceptual analysis and a research program. *Policy and Society*, 36(3), 385–396.
- Pierre, J. (2020). Nudges against pandemics: Sweden's COVID-19 containment strategy in perspective. *Policy and Society*, 1–16.
- Rocco, P., Béland, D., & Waddan, A. (2020). Stuck in neutral? Federalism, policy instruments, and counter-cyclical responses to COVID-19 in the United States. *Policy and Society*, 39(3), 478–493.
- Sabel, C. (2012). Dewey, democracy, and democratic experimentalism. *Contemporary Pragmatism*, 9(2), 35–55.
- Sabel, C. F., & Zeitlin, J. (2008). Learning from difference: The new architecture of experimentalist governance in the EU. *European Law Journal*, 14(3), 271–327.
- Toshkov, D., Carroll, B., & Yesilkagit, K. (2021). Government capacity, societal trust or party preferences: What accounts for the variety of national policy responses to the COVID-19 pandemic in Europe? *Journal of European Public Policy*, 0(0), 1–20.
- Tosun, J., & Lang, A. (2017). Policy integration: Mapping the different concepts. *Policy Studies*, 38(6), 553–570.
- Trein, P. (2017). Coevolution of policy sectors: A comparative analysis of healthcare and public health. *Public Administration*, 95(3), 744–758.
- Trein, P., & Maggetti, M. (2020). Patterns of policy integration and administrative coordination reforms: A comparative empirical analysis. *Public Administration Review*, 80(2), 198–208.
- Trein, P., Maggetti, M., & Meyer, I. (2021). Necessary conditions for policy integration and administrative coordination reforms: An exploratory analysis. *Journal of European Public Policy*, 28(9), 1410–1431.

- Vagionaki, T., & Trein, P. (2020). Learning in political analysis. *Political Studies Review*, 18(2), 304–319.
- Vrangbaek, K., & Pedersen, K.-M. (2020). *Denmark's response to the coronavirus*. Retrieved September 30, 2021, from <https://www.cambridge.org/core/blog/2020/04/03/denmarks-response-to-the-coronavirus-pandemic/>.
- Wu, X., Ramesh, M., & Howlett, M. (2015). Policy capacity: A conceptual framework for understanding policy competences and capabilities. *Policy and Society*, 34(3–4), 165–171.
- Zeitlin, J. (2016). EU experimentalist governance in times of crisis. *West European Politics*, 39(5), 1073–1094.