

# Thinking outside the box, improvisation, and fast learning: Designing policy robustness to deal with what cannot be foreseen

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## Abstract

Policies are continually subjected to turbulence and crises. Interest in policy robustness as a fundamental way to deal with what cannot be foreseen is increasing. Thus, there is a flourishing stream of literature suggesting that policies need to be designed to be agile and flexible. However, the associated characteristics remain undeveloped. This article fills this gap by drawing on lessons obtained from the unplanned behaviors that were adopted in the management of the COVID-19 pandemic. Individual and organizational behaviors characterized by outside the box thinking, improvisation, and fast learning yielded solutions to unexpected problems. In this article, some of these emblematic unplanned behaviors are assessed, and the research builds on the literature on policy robustness, crisis management, and organizational theory to identify three enabling conditions to design more robust policies: coordinated autonomy, training for unplanned responses, and political institutional capacity.

## 1 | INTRODUCTION

The impact of crises, of any type, always raises questions about whether and how policies can be designed to deal with what cannot be foreseen, which leads to the problem of whether and how a policy can be robust. The concept

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of policy robustness has acquired a significant role in the policy literature by emphasizing that robust policies can be agile and flexible when needed. However, this literature, while very promising, still appears slightly generic in terms of concrete policy design. Overall, a convincing connection is missing between what is necessary to deal with a crisis (flexibility and agility) and how to design it.

To find this connection, we draw some lessons from the unplanned individual and local responses that emerged in three Italian regions in response to the COVID-19 pandemic outbreak. These cases are not chosen to assess how the pandemic was responded to in Italy; instead, they are emblematic cases in which unplanned responses (conceptualized as thinking outside the box, improvisation, and fast learning during the crisis) have emerged at the individual and local levels. Reflecting on these unplanned responses, from the theoretical lenses of the crisis management and organizational theory literature, is helpful for improving the theorization on policy robustness by making it more fine grained in terms of suggested policy design.

Section 2 discusses the literature on policy robustness and shows its limits. Section 3 presents some unplanned behaviors during the initial healthcare response to the pandemic in Italy and discusses them from the theoretical perspective. Section 4 summarizes some applicable suggestions on three enabling conditions that can increase policy robustness against crises, while the conclusion (Section 5) outlines some possible directions for further research.

## 2 | POLICY ROBUSTNESS, TURBULENCE, AND UNEXPECTED CRISES

### 2.1 | Conceptualizing policy robustness

Robustness has become a promising attribute of public policies that has attracted the attention of scholars in various social science disciplines as a potential alternative to resilience (Capano & Woo, 2017). Policy robustness can be defined as a property “that allows the specific functions/goals of a policy—in terms of behaviour to be regulated and values to be delivered—to be maintained over time despite contingent or critical fluctuations arising from external changes or internal challenges” (Capano & Woo, 2018, p. 424; see also Jen, 2003; Van Oss & van't Hek, 2011). If robustness appears to be a relevant property of policies in normal times, it should be considered even more relevant in turbulent times, such as those “in which the interaction of events and demands is experienced as highly variable, inconsistent, unexpected, and/or unpredictable” (Ansell et al., 2017, p. 8). Furthermore, policy robustness becomes strategic when turbulence is heightened and becomes an unexpected systemic crisis, such as a pandemic, which represents a potential structural threat to policy functionality and thus its capacity to solve the assigned problems (Ansell et al., 2021). In fact, a pandemic such as that of COVID-19 represents a typical unexpected challenge that is characterized by an unknown–unknown situation (Mathijssen et al., 2007).

This type of crisis can represent a major challenge for existing policy arrangements (most importantly health policy, in the case of a pandemic) and even for political and societal arrangements because the recognition and response to this type of crisis depend not only on policy robustness but also on more general political-institutional capacities. Among these capacities essential to coping with an unexpected crisis is that of identifying that a potentially novel situation is occurring and thus responding accordingly. As underlined, many countries were not prepared for this unexpected event (Capano, 2020; Capano et al., 2020), and their policies were therefore not sufficiently robust.

Thus, an unexpected crisis is something that definitively and dramatically stresses the existing governance arrangements and institutionalized dynamics of a policy field and serves as a type of litmus test of its robustness.

### 2.2 | Strategies for guaranteeing policy robustness

According to the recent social science literature, policy robustness is reached through the capacity to deal with contingent or critical fluctuations through agility (the capacity to be proactive and respond quickly), flexibility

(in organizational behavior and in reallocating financial and human resources), improvisation, and learning (Capano & Woo, 2018; Cunha et al., 2002; Doz & Kosonen, 2014; Howlett et al., 2018; Mergel et al., 2020).

However, designing agile and flexible structures and procedures as well as processes that allow improvisation and learning is clearly not a simple task. The recent literature provides some suggestions for increasing agility, flexibility, and learning and thus the probability of policy robustness. Capano and Woo (2018), for example, suggest four key characteristics: diversity (of streams of knowledge or of distribution resources), modularity (organizational and procedural), redundancy (organizational, functional, and processual), and polycentricity (intended as a pluralistic governance arrangement that includes various stakeholders and different institutional levels).

Ansell et al. (2021), drawing from the COVID-19 experience, propose five dimensions for ensuring robustness: scalability (the capacity to rapidly mobilize and demobilize resources); prototyping (through which new solutions can be rapidly reached through a trial and learning process); modularization; bounded autonomy (through which local actors can hold broad-based ownership and strategic commitment); and strategic polyvalence (the capacity to design solutions that can take new directions according to the context). Another stream of research focuses on the relevance of those procedural tools that favor informal relationships among actors and stakeholder involvement in policy design, monitoring, and surveillance (Bali et al., 2021; Howlett & Ramesh, 2022).

These insights originating from the literature are very helpful for suggesting how policy robustness can be conceptualized and designed. However, attempts to design robust policies are often unable to give concreteness to the relationship between organizational design and individual behavior at the frontline. For example, the policy design of diversity, modularity, and redundancy should be performed in an integrated and calibrated manner because an excessive focus on one of these characteristics could result in policy failure or disruption. For instance, excessive diversity could result in gridlock, particularly if contestations occur between different decision nodes. Similarly, policy designs that are too modular could result in a lack of integration in the overall design, with policy outcomes either disrupted or only partially achieved. Again, relying too much on redundancy can be costly because resources are unnecessarily devoted to maintaining an excessive level of slack that is rarely, or even never, utilized. Thus, polycentric governance arrangements should be designed to guarantee a proper equilibrium among diversity, modularity, and redundancy through procedural tools capable of ensuring a certain coordination level among the various policy field components, whereas strategic polyvalence should be based on specific policy capacities at the individual, organizational, and systemic levels (Wu et al., 2018), as well as on a certain degree of political robustness (Sørensen & Ansell, 2021).

Overall, the literature is very promising on how policy robustness could be designed or obtained but risks overlooking the fact that the design should be capable of ensuring appropriate behavior by the actors who directly deal with the crisis. It is assumed that policy designers should focus on designing organizations, procedures, and processes capable of guaranteeing the usual results while allowing a rapid response to heightened turbulence or unexpected critical events by abandoning routine behavior. This problem is challenging because certain behaviors and organizational arrangements that are recommendable under normal conditions turn out to be unsuitable for crisis situations, and vice versa.

Thus, the real problem to be solved is how to guarantee robustness under both normal and crisis conditions, which means ensuring more effective behaviors by organizations and individuals according to specific (ordinary vs. extraordinary) contexts.

### 3 | UNPLANNED RESPONSES DURING THE INITIAL REACTION TO COVID-19: THINKING OUTSIDE THE BOX, IMPROVISATION, AND FAST LEARNING

Unplanned responses are quite common during crises, as was the case during the reaction to the COVID-19 pandemic. Studies on how this kind of crisis should be dealt with by adopting improvisation and bricolage (Wiedner et al., 2020), creative problem solving (Cohen & Cromwell, 2021), and fast responses (Zenk et al., 2020) have seen a

sharp increases since the outbreak of the pandemic. Overall, these studies have emphasized that unplanned responses are necessary to deal with COVID-19. Consequently, additional studies have empirically explored these examples in various policy fields, such as healthcare, administrative behavior, and social work (Babu et al., 2020; Cox et al., 2021; Ferguson et al., 2021; Gofen et al., 2021; Tort-Nasarre et al., 2021). We focus on some emblematic unplanned responses in Italian healthcare that can well represent many other similar experiences that happen at the local level worldwide. Emblematic cases from the Italian experience have a specific relevance for our theoretical effort because Italy was the first European country to experience the pandemic; thus, it had less time than other countries to react. Thus, the Italian case perfectly represents a situation in which the lack of proper preparedness for the unexpected is prominent.

The first wave of COVID-19 found that the Italian health care system was largely unprepared (Capano, 2020; WHO, 2020). In the first weeks of the emergency—in Italy, as in many other countries—responses were largely conformist: emergency responders followed previously established procedures and often proceeded by analogy with previously experienced crises or emergencies.

The way in which Lombardy (Italy's largest region) dealt with the first cases of coronavirus is a good example of a conventional response to an unexpected and highly uncertain crisis. The government of this region was accused of multiple errors in dealing with the first wave of the pandemic (Casula et al., 2020). However, many of these mistakes were derived from their adherence to the indications given at the national level (Toth, 2021). For example, during the very first days of the coronavirus spread, to free up beds in hospitals, Lombardy asked approximately 15 residences for the elderly to host patients with less serious COVID-19 infections. This strategy soon proved to be a boomerang that transformed residences for the elderly into hotbeds of contagion. In defense of the Lombardy Region, however, some documents previously issued at the national level, including the national pandemic plan of 2006, contemplated the possibility of using out-of-hospital residential facilities (including residences for the elderly) for nonacute patients to decongest hospitals. “Unfortunately,” said the president of the Lombardy Region, Attilio Fontana,<sup>1</sup> “we followed the protocols, and we made all our choices in agreement with the National Institute of Health.” Lombardy is, therefore, an emblematic case of decisions that turned out to be wrong because leaders uncritically followed the guidance given by their superiors.

However, the conventional and formalistic response initially provided by Lombardy was not the rule. Many accounts agree that Italian health staff demonstrate flexibility, remain creative even under pressure, and devise effective *impromptu* solutions to emerging problems (Toth, 2021; WHO, 2020).

Some examples of these “unplanned responses” are presented below. To select them, we reviewed social media, news reports, and databases (such as the COVID-19 Health System Response Monitor of the European Observatory of health systems and policies) to better understand the landscape. We have seen that at the organizational level, there has been a common but localized effort to secure PPE and medical supplies and to increase the number of ICU beds (Waitzberg et al., 2021). However, these are normal processes of organizational adaptation, while at the individual level, we found other cases, such as the transformation of snorkeling masks in ventilators (Sedita et al., 2022) and valves for ventilators printed in 3D (Corsini et al., 2021). In addition, we are quite sure that there are other cases that did not become publicly known. However, we have selected the cases presented below because they better provide an emblematic illustration of what unplanned behavior means and can aid reflection on which conditions are needed to allow them not only to be acted upon but also to be diffused until they become a collective practice.

### 3.1 | Thinking outside the box

#### 3.1.1 | Codogno's anesthesiologist and patient one

Annalisa Malara is an anesthesiologist working at the hospital of Codogno (in the province of Lodi, Lombardy). She diagnosed the first official case of COVID-19 in Italy. On February 20, 2020, Dr Malara was in charge of a

38-year-old patient (labeled by the media as “Patient One”) suffering from worrisome pneumonia that degenerated within a few hours. The diagnosis was acute respiratory distress syndrome. The patient had not had any contact with a person who had been in China. At that time, the indications from the World Health Organization, which were faithfully taken up by the Italian Ministry of Health, recommended administering a nasopharyngeal swab test exclusively for symptomatic patients returning from a trip to China during the 14 days preceding the onset of symptoms or who had been exposed to patients with coronavirus.

In search of a diagnosis, Annalisa Malara decided to break protocol and administer the swab test to her patient. “I had to ask for permission from the local health authority,” Dr Malara recounts, “because the protocols did not justify it. I was told that if I felt it was necessary and I took responsibility for it, I could do it.”<sup>2</sup>

Failure to follow the guidelines may result in disciplinary action and the doctor being held liable—civilly and criminally—for any damage caused. Annalisa Malara showed courage and took responsibility. Other colleagues in similar circumstances did not. “Requesting the swab meant taking a risk. I could have been wrong; I knew that according to the protocol, there were no grounds to suspect a contagion” (Malara, 2020). The swab test revealed that the patient being treated had tested positive for SARS-CoV-2, as the doctor suspected. “My colleagues and I,” comments Dr Malara, “chose to do something that the legislation did not dictate. Obedience to medical rules is among the causes that allowed this virus to run undisturbed for weeks.”<sup>3</sup>

A few months later, Annalisa Malara was awarded an honor by the President of the Lombardy Region, Attilio Fontana, who stated “Here is the truth: if Dr. Malara had not violated ministerial protocols we would not have discovered the virus.”<sup>4</sup>

### 3.1.2 | Andrea Crisanti, a microbiologist at the University of Padua

During the first weeks of pandemic management, the indications from the World Health Organization, which were adopted in Italy by the Ministry of Health, were as follows: given the limited capacity of laboratories to process molecular tests, these tests should be administered only to the most serious subjects with symptoms of acute respiratory infection. Most of the regions followed this indication. Veneto, however, chose a different strategy in following the suggestion of Prof Crisanti, Professor of Microbiology at the University of Padua. Because Veneto could process a markedly higher number of swabs than other regions, asymptomatic subjects in Veneto were administered the swab test. This strategy, which clearly conflicted with what was initially indicated at the national level, was highly criticized by both government officials and experts from other regions (Casula et al., 2020). The story is summarized by the words of Crisanti: “I have administered swabs to asymptomatic people when it was not allowed. I violated the rules on swabs, and I did the right thing.”<sup>5</sup>

### 3.1.3 | Going against the tide

The examples involving Annalisa Malara and Andrea Crisanti appear to encapsulate a common lesson. In crisis management, very often it is not enough to follow the directives coming from the top or the instructions contained in official documents. Those who operate in emergency situations—both decision-makers and street-level operators—must always maintain a critical sense, be able to think “outside the box” (Boin et al. 2005; Considine, 2012), and act accordingly.

Thinking outside the box means questioning the dominant interpretation shared by the majority and thus cultivating what Weick (1993) calls the “attitude of wisdom.” Information and directives from higher levels or from sources considered authoritative should not be taken for granted, as they may prove fallacious. At the same time, proposals and information that may at first glance appear unorthodox or bizarre should not be hastily labeled inadmissible. Even under pressure, says Weick, people must not abandon thinking for themselves. The benefit of doubt should always be

cultivated, and information and directives should be taken *cum grano salis*. Thinking outside the box is therefore about showing a critical sense and autonomy of judgment. It is an attitude opposed to “groupthink” (Janis, 1972, 1989), to conformism, and to mimicry (the strategy according to which, when in doubt, I follow what others do).

Going against the tide usually involves paying a price: you expose yourself personally; you take a risk. Staying in the herd is more comfortable; it is less risky. Those who, like Annalisa Malara and Andrea Crisanti, challenge the “dominant version” therefore show courage and take responsibility. Moreover, in retrospect, these counter-current decisions proved to be correct.

These cases thus confirm the importance, in emergency situations, of maintaining judgment autonomy and avoiding groupthink.

The recommendation, of course, is not to break rules *per se*. Procedures and orders should be transgressed only if an individual comes to the believe they are fallacious and hinder the achievement of the goal.

## 3.2 | Improvisation

As confirmed by the World Health Organization report entitled “*An unprecedented challenge: Italy's first response to COVID-19*,” due to the lack of preparedness and to the fast diffusion of the virus, in Italy, “*the initial reaction of the hospitals was improvised, chaotic and creative*” (WHO, 2020).

### 3.2.1 | Vo' Euganeo

Vo' Euganeo is a town of approximately 3300 inhabitants in Padua Province. On February 21, 2020, the first victim diagnosed with COVID-19 in Italy originated from this town. The decision made by the Veneto regional government was sudden (and made in a few hours): the town of Vo' Euganeo was immediately isolated and placed in lockdown for 2 weeks (Lavezzo et al., 2020). The regional government, chaired by Luca Zaia, decided that the entire population of Vo' Euganeo should be swabbed to understand which part of the town was positive for COVID-19. While the possibility of implementing a local lockdown was foreseen in the national pandemic plan (adopted before the outbreak of the pandemic), in no way did the plan provide for mass testing of the population. The decision to swab the entire population of Vo' was therefore an extemporaneous decision, not foreseen by national protocols and recommendations.

The Veneto region asked Prof Andrea Crisanti to analyze the data obtained from this massive testing. Crisanti, when accepting the assignment, proposed, in turn, a “second round” of swabs performed approximately 10 days after the initial swab (Lavezzo et al., 2020; Starr, 2020). This should be considered a timely insight on Crisanti's part: this procedure was also not foreseen in the national plans and protocols. This second round of swabs allowed the University of Padua to obtain a dataset of enormous interest for understanding the dynamics of the propagation of the epidemic. The swabs administered in Vo' revealed the existence of a high percentage of infected but asymptomatic individuals who presented a viral load similar to that found in symptomatic individuals and who were thus capable of transmitting the coronavirus (Lavezzo et al., 2020). Based on these findings, Andrea Crisanti, on March 17, 2020, proposed to the Veneto Region an “active surveillance” plan based on testing and tracing and on the search for the virus even in asymptomatic subjects. The Crisanti plan was supported by the Veneto regional government and was therefore implemented.

### 3.2.2 | Extemporaneous development of unplanned solutions

A retrospective analysis of how Italy managed the first pandemic wave reveals, at the local level, numerous episodes attributable to improvisation (Toth, 2021). The intuition of Prof Andrea Crisanti in relation to the outbreak in Vo' Euganeo is just one example among many that could be mentioned.

Improvisation is a capability that not only is often underestimated in crisis management but also risks taking on a negative connotation: those who improvise may be perceived as not having prepared well in advance; improvisation is used by actors who have not memorized the part and therefore resort to gimmicks. It is widely held that coping with an emergency requires foreseeing the danger and elaborating a detailed plan of action in advance: all the actors must scrupulously follow the planned script. However, the script sometimes does not exist, or the script prepared in advance may turn out to be incomplete or unsuitable for dealing with an unforeseen crisis. Because it is not possible in crisis management to predict everything in advance, first responders must “*be well versed in the art of improvisation*” (Ansell et al., 2010).

Improvisation and thinking outside the box can sometimes be combined but are two conceptually distinct skills. Those who think outside the box challenge the dominant interpretation, consider some of the indications received to be fallacious, and therefore do not apply them to prevent error. Those who improvise do not always violate the rules and dominant values: they improvise when the rules are vague or incomplete, when there are no precise indications, or when the official tools provided by the plans are not available. An alternative solution must then be promptly worked out, so the goal can still be achieved.

The literature on improvisation, starting with Berliner's seminal work on jazz orchestras (Berliner, 1994), highlights a crucial aspect. Unlike the easy interpretation, improvisation does not involve inventing something from nothing. Improvisation does not simply involve creating in an intuitive and extemporaneous way or producing something on the spur of the moment (Weick, 1998). One improvises from something pre-existing. Improvisation implies the re-elaboration of “*precomposed material*” and the reworking of formerly held ideas that are deeply internalized and ruminated (Berliner, 1994). As Weick (1998) states, “*improvisation is a mixture of the pre-composed and the spontaneous.*”

### 3.3 | Fast learning

#### 3.3.1 | Emilia-Romagna and sudden changes of course

Between the end of February and March 2020, that is, during the first 3–4 weeks of the pandemic emergency management, the Emilia-Romagna region adopted a predominantly hospital-based, wait-and-see approach: it waited for sick people with severe symptoms to arrive at the hospital and did not perform any surveillance of the territory.

Starting in the last week of March 2020, Emilia-Romagna changed its strategy (Toth, 2021). In the words of the president of the region, Stefano Bonaccini, the region progressed from a “defensive” phase to a “proactive” phase, and the latter phase involved looking for infected individuals on the ground. The catch phrase became “*let us go find the sick at home*” (Casula et al., 2020). General practitioners and public health services were assigned the task of monitoring positive and suspected cases in real time and therefore acted as a filter: the intent was to keep the infected at home as much as possible and to send only the most serious cases to the hospital.

Additionally, a few weeks after the declaration of the COVID-19 health emergency, the Emilia-Romagna Region decided to reverse course regarding swabs (Capano & Lippi, 2021). At first, Emilia-Romagna aligned itself with the national policy, which indicated that swabs should be administered only to individuals presenting symptoms. In approximately mid-March 2020, however, the expansion of the network of laboratories available for processing swabs allowed a change in strategy, which was announced publicly by President Bonaccini: “*We will do many more swabs.*”<sup>6</sup> This change of course included the periodic testing of healthcare workers, the swabbing of even asymptomatic individuals, and the scheduling of massive testing in response to local outbreaks.

Emilia-Romagna was the first Italian region to introduce—in approximately mid-March—the administration of swabs in the “drive through” mode. Inspired by experience in South Korea, this mode requires that the test be performed while the patient remains in a car, and as a result, the collection of swabs is faster and safer. This mode of collection has since been emulated by other regions.

Ultimately, the case of Emilia–Romagna appears to be characterized by the ability of the entire system to learn rapidly: by capitalizing on initial mistakes, proceeding by trial and error, emulating strategies tested elsewhere, and developing new solutions at the local level. Within a few weeks, the intervention model was revised and refined, and solutions devised at the local level were extended to the entire system.

### 3.3.2 | Self-reflection and self-correction

The case of Emilia–Romagna illustrates—especially when compared with that of the neighboring region of Lombardy—a further quality that can make a difference in crisis management: fast learning (Weber & Antal, 2003). This concept encompasses multiple capabilities. Fast learning involves, first, promptly understanding when the strategies and procedures in use are inapplicable or ineffective. This awareness leads to an investigation of the causes of the problem and the development of alternative modes of action. Once the new solutions are adopted and proven effective, they do not remain local but are extended to the entire system.

Specifically, this last characteristic marks the difference between individual and collective learning. Fast learning certainly presupposes an individual effort but is primarily a collective capacity. Often, innovations emerge at the local level but remain confined there and are not extended to the entire organizational system. The cases of Emilia–Romagna and Lombardy when dealing with the first wave are good examples in this regard. Emilia–Romagna rapidly realized that it was making mistakes and promptly changed its approach. Lombardy, on the other hand, took longer to reverse course. Various Italian regions exhibited excellent intuition, spontaneous solutions, and cases of bricolage, but the innovations created at a peripheral level were not readily adopted by the regional government or extended to the entire system.

Learning has various modalities (Levitt & March, 1988). One can learn from the past. One can learn from one's mistakes. One can learn from the experience of others. The case of Emilia–Romagna exemplifies a mix of learning modalities. The shift from a wait-and-see approach to a more proactive approach was born from the field experience of some intensive care units, which saw patients arrive at the hospital at an overly advanced stage of infection. A typical learning-by-doing dynamic allows an understanding of the importance of early treatment. The search for the right therapy for patients with COVID-19 also involved “trial-and-error.” Other innovations introduced in Emilia–Romagna were derived from the emulation of experiences gained in other regions or abroad. The administration of tests in a “drive-through” mode was borrowed from other countries. The example of the Veneto region certainly influenced choices regarding swab tests. The Emilia–Romagna regional government had the humility to investigate experiences elsewhere and to question previous decisions (Venturi, 2020).

## 4 | FILLING THE IMPLEMENTATION GAP: THREE ENABLING CONDITIONS FOR MORE ROBUST POLICY DESIGN

The examples presented in the previous section show that when faced with unforeseen events, the existing rules could not provide solutions appropriate to deal with the unforeseen event (and could sometimes offered incorrect guidelines).

Political–administrative systems can prepare for crises, unforeseen events, and highly turbulent conditions. Plans and protocols can be prepared for implementation under emergency conditions. It is important to be clear on this point and to avoid misunderstandings. We are not arguing here that preventive emergency plans should not be prepared and that we should rely solely on improvisation. Preventive contingency plans—if carefully prepared and tested through emergency drills—are certainly useful, if not indispensable, in dealing with crises. However, preventive contingency plans have difficulty anticipating all the possible challenges/threats that will arise or detailing all the decisions and actions to be implemented at various levels to deal with a crisis. Protocols and plans fatally leave a



discretionary margin to decision-makers and street-level operators: sense- and decision-making activities cannot be carried out in advance but must be made on the spot in adaptation to the specific contextual conditions. Regardless of how detailed and far-sighted they may be, preventive plans always leave an implementation gap that must be filled by “unplanned” activities, which must be conducted once the crisis breaks out.

The three “unplanned behaviors” we identified are capabilities that bridge the implementation gap: they allow the effectiveness of the system to be maintained and for its objective to be achieved even under unforeseen and highly turbulent conditions. By complementing (and correcting) preventive plans, unplanned behaviors contribute to making emergency systems more reliable and policies more robust. They therefore constitute “safety valves” that can be activated under emergency conditions to supplement what has already been prepared, thus making policies truly robust.

Overall, then, policies can be made robust against crises by activating a certain number of unplanned behaviors while having the systemic capacity to immediately draw lessons from these behaviors and diffuse them.

Our line of reasoning leads to the need to bridge two dimensions of policy robustness: on the one hand, there is a need to design organizational and processual arrangements such that the response can be agile and flexible and, on the other hand, the capacity of frontline actors needs to be truly flexible and agile.

This bridge means that policy design should focus not only on the proper equilibrium among the organizational dimensions of the related policy field by fostering modularity, diversity, and scalability, among other features, but also on the procedures and processes that can favor behaviors that cannot be planned in advance. Thus, a policy robustness approach should also consider how to enable frontline policy actors to respond appropriately to unforeseen events. This is a common strategic point for effective policy robustness, not only in times of crisis.

During the COVID-19 pandemic, policy actors first behaved according to specific plans, rules and protocols. However, not every outcome can be foreseen in advance, and it is not possible to provide detailed indications regarding events that are largely unpredictable. Policy robustness can then be ensured by providing for those conditions that can enable (1) the (decentralized) capabilities of thinking outside the box, improvising and fast learning and (2) the systemic capability to immediately adopt and diffuse these behaviors when effective. Therefore, we seek to identify these enabling conditions. We identify at least three: coordinated autonomy, training for unplanned responses, and the steering capacity of political institutions.

## 4.1 | Coordinated autonomy

There is a widespread belief that in the face of crises, it is preferable to centralize decisions and strengthen the chain of command. In emergency situations, it is argued that commands should be entrusted to a single general who makes decisions independently, rapidly, and with a single voice. A hierarchical, military-style structure with a clear line of command is in mind: the center gives the orders, and the subordinates execute. However, the “centralization thesis” is contradicted not only by the above-reported cases but also by several authors who have dealt with crisis management, who suggest decentralizing decision-making under emergency conditions (Boin & 't Hart 2010; Quarantelli, 1988; Roberts et al., 1994; Rochlin et al., 1987; 't Hart et al. 1993).

In times of crisis, frontline operators must be given autonomy and must be allowed creative discretion (Hupe, 2013). This stream of literature against centralization in crisis management perfectly fits the suggestions originating from the policy robustness literature that, as summarized above, calls for organizational diversity, modularity and polycentricity when designing policies. Thus, a robust response against the unknown can be based only on organizational autonomy and discretion in a context in which hierarchy is not the main organizational and policy principle. Organizational autonomy and discretion are behavioral attributes that allow flexible and agile responses and are expected to be driven by robust policy design. Decentralization better guarantees flexibility and agility in response to unforeseen events, but it cannot guarantee the diffusion of the novel effective local solutions that were adopted.

Thus, policies, to be robust, must be designed according to a principle we could call “coordinated autonomy.” By this (apparent) oxymoron, we mean systems that do not merely grant autonomy and room for individuals and organizational frontline actors to maneuver. The autonomy of single units is insufficient to guarantee robustness: autonomy alone risks creating a fragmented system in which the components do not interact or help each other. Policy design must balance autonomy and coordination (from the center), favoring two fundamental characteristics: (1) when a component fails or malfunctions, the other parts must work to correct the error and help the faulty component (the center must then intervene to support the peripheral components in difficulty) and (2) solutions that prove effective must not remain confined to the local level (as in the case of the massive testing in Veneto or the reorganization of the healthcare delivery Emilia-Romagna) but must spread to the other components (the center must recognize the most promising solutions and extend them to the entire system). These two characteristics—which simple modularity does not guarantee and which loosely coupled systems typically do not possess (Weick, 1976)—guarantee the coordination of the autonomous parts, preventing them from behaving like watertight compartments. Clearly, here, policy robustness requires a proper design of procedures pushing toward coordinated autonomy and practicing/exercising these procedures in normal times.

## 4.2 | Training for unplanned responses

Additionally, openness to unplanned responses should be prepared in advance. What does this mean in concrete terms? If you want the actors to show certain individual capabilities in crisis conditions (including thinking outside the box, improvisation, and fast learning), you must encourage and train them beforehand. You must create, under normal circumstances (or, in any case, under less turbulence), the conditions that favor these behaviors. Organizations cannot expect to completely transform in crisis situations or to behave very differently from how they usually do. It is therefore in “times of peace” that we need to sow seeds to accustom individual actors to developing certain skills.

What is needed to increase the chance of thinking outside the box, improvisation, and fast learning?

*Thinking outside the box* is an individual inclination that can be encouraged and strengthened by an organizational context that is open to dissent, frank confrontation, individual discretion, and nonhierarchical decision-making. In contrast, an organizational culture based on discipline and conformism, with its attendant fears of contradicting superiors and breaking formal procedures, should—*ceteris paribus*—inhibit the autonomy of judgment and discourage the critical evaluation of the provisions received. At least in principle, a diversity-oriented policy design (at the level of decision-making bodies, experts, working teams, etc.) should favor a multiplicity of interpretations, dissenting positions, and opinion confrontation. Individuals with similar characteristics and backgrounds risk slipping into groupthink.

These general principles can be applied through concrete measures. Let us consider two examples. Appointments on a fiduciary basis (those in which a particular role/position is filled by appointment by a political body or manager, who can confirm or revoke the appointment at their discretion) tend to incentivize an attitude of loyalty and deference, which discourages critical dissent from strategies and directions from the top. In contrast, non-fiduciary appointments are more likely to protect those who wish to express views contrary to the “ruling coalition.”

Another example involves governments that, in dealing with the pandemic, have obviously relied on experts. In some cases, governments have used plural, heterogeneous bodies composed of experts with diverse knowledge and experience. In other cases, the experts have been highly homogeneous. At least on paper, the first strategy allows for more conflict among experts, but at the same time, it promotes a pluralistic interpretation through the comparison of various opinions and disciplines. The second strategy should ensure noncontradictory advice and less conflict, but it exposes the organization to groupthink and risks neglecting certain aspects of the problem.

Similar to thinking outside the box, the “*art of improvisation*” can be influenced by organizational design and developed in advance. Improvisation is not a simple instinct or an innate talent but is rather an individual skill that can be learned and kept in training. By thinking about the improvisation of theater actors, there are exercises to develop the ability to improvise. The naturalness of improvising often increases with experience: actors who are

more familiar with the stage, those who have played many roles in their career, and those who have internalized a greater variety of “precomposed materials” are better able to improvise. Thus, improvisation has not only a spontaneous component but also a “trained” component.

Policy design can make a difference, encouraging or discouraging individual improvisation. Systems marked by legalism and obsequious adherence to written rules tend to discourage improvisation. Individuals are not trained in problem-solving and fear sanctions if they engage in behavior not explicitly provided for by laws or established practices. In contrast, improvisation is encouraged by a design oriented toward individual discretion, structural flexibility, and procedural agility.

Examples concrete measures that can be taken “in peacetime” can be given of to encourage improvisation. In many countries, decision-makers and emergency operators are periodically required to carry out drills and group simulations to prepare for crisis management, emergency decision-making, and thus improvisation. Since the aim is for individuals to have at their disposal a wide variety of “precomposed materials,” it is useful to promote strategies such as job rotation, to train individuals to be polyvalent and take on “virtual roles” (Weick, 1993), and to invite professionals to acquire knowledge outside their areas of specialization. Structural investments of this kind allow individuals to build up a vast repertoire of tools and “composing materials,” which can be used and recombined when needed.

*Fast learning* is an individual and collective capability that, like the previous two, can be supported by adequate training and a favorable environment. This capability is fostered by cultural and organizational contexts that attach great importance to knowledge development and sharing; their goal is to stimulate the exchange of ideas, diversity, and multidisciplinary. Collective learning processes are inherent in self-reflective systems, that is, those accustomed to investigating their own mistakes and constantly evaluating the effectiveness of their actions. The processes of inquiry and self-assessment are facilitated by a deep-rooted “report culture,” in which errors are not blamed or hidden but openly reported as an opportunity for improvement.

On the other hand, in some organizational systems, errors are concealed or denied. In these contexts, whistleblowers risk being punished, and scapegoats are sought. Overconfidence can also be an obstacle to the prompt detection of errors and their correction (Vaughan, 1996). Then, in other organizational contexts, learning occurs locally but is not extended to the entire system. This is particularly true when communication and exchange of experience are lacking between the various components of the system.

Self-correction and learning processes may be inhibited or hindered by an overly rigid and difficult-to-modify legislative framework, whereas they are fostered by a more agile and flexible legislative environment. Lessons learnt at the local level need to be extended to the entire system. To compensate for the lack of communication between the various parts of the system, it is useful to provide opportunities for collective meetings that encourage the exchange of experiences and to set up bodies that collect and disseminate best practices. To make them more robust, policies must also be designed with explicit evaluation systems and self-correction mechanisms. In contrast, many pieces of legislation are passed without an explicit provision for any evaluation process of the effects produced by the measure and without any mechanism to allow for corrections and adjustments in progress.

All these capabilities can thus be improved and “prepared” through continuous training inside the respective organizations, which should be designed to promote diversity, internal dissent, individual responsibility, the discretion given to street-level operators, the attitudes of self-reflection and self-assessment, a reporting culture, a continuous search for innovation, and flexibility (Garud et al., 2013). However, these characteristics need both specific rules on organizational roles and proper recruiting and training systems. Thus, robust policy design should focus not only on organizational design but also on designing the procedures and processes through which individuals are pushed to capitalize on organizational characteristics (Gofen & Lotta, 2021). Curiously, the characteristics listed above are often discouraged or inhibited in normal times. To address this issue, the concept of semi-structured organizations could be usefully considered (Bingham & Eisenhardt, 2011; Sonenshein, 2014). Such organizations offer space to the internal units to tailor solutions to their specific problems in a general context of strategic common goals. This organizational type structurally stimulates members to assume that there could be various responses to a given problem and can guarantee the predictability of behavior, standardization, and routine responses. However, at

the same time, precisely because there is no rigid set of behavioral procedures, organizations can leave room for responses that cannot be planned (Kamoche & Cunha, 2001).

### 4.3 | Political institutional capacity

Finally, the proposed empirical cases also show that another condition is necessary for making robust policies, that is, the steering capacity of the related political systems. As shown in the cases reported above regarding the regional governments of Emilia-Romagna, Veneto, and Lombardy, and the Italian national government in action, it is clear how important it is for the individual actors deployed at the front lines to be supported by authentically enabling political institutions.

Some regional governments (Veneto and Emilia-Romagna), more so than Lombardy and the nation, have demonstrated steering capacity to the extent that they have been able to promote autonomy and centralized-decentralized decision making, seek and accept the advice of experts, shift control to the experts on the spot, show humility in copying others, admit mistakes and reverse decisions, and extend the local solutions that prove most promising to the entire system. Overall, these governments have demonstrated a superior ability to effectively coordinate the response, combining organizational autonomy, discretion, and the unplanned responses of the individuals involved.

These two governments have demonstrated steering capacity to the extent that they have been able to promote autonomy and centralized-decentralized decision-making; to encourage the diversity of policy advisors; to seek and accept the advice of experts and shift control to the experts on the spot, cultivating the “attitude of wisdom” recommended by Weick, listening also to heterodox and apparently bizarre interpretations, and supporting peripheral components in difficulty; to evaluate the effects of the measures adopted; to show humility in copying from others; to admit mistakes and reverse decisions; and to extend the local solutions that prove most promising to the entire system. Overall, these governments have demonstrated a superior ability to effectively coordinate the response, combining organizational autonomy, discretion, and the unplanned responses of the individuals involved. These are the capabilities we expect decision-makers to show not only in peacetime but also when they are under pressure during times of crisis management.

It is safe to assume that these qualities displayed by policymakers in the management of the first wave of COVID-19 are not so much the result of extemporaneous choices and personal predispositions of the individual leader in office but rather systemic qualities that have matured and been repeated over time in less turbulent previous conditions. This leads to the final piece of our argument: the importance of political institutions and leaders that are authentically enabling, which we might call a particular form of political robustness (Sørensen & Ansell, 2021).

This dimension involves the capacity to make coordinated autonomy truly work by interacting with all the involved actors, monitoring the emergent cases of improvisation, thinking outside the box, and assessing their potential systemic relevance. Thus, it is an essential enabling condition for fast learning during and not after a crisis and thus for the systemic extension of local/individual effective behaviors/actions that cannot be planned (Aldrich, 2012; Desrosier, 2011). The steering capacity of political institutions appears to be the more problematic, enabling condition to design due to the dependence of these institutions on political and social factors (such as the quality of social capital, the procedures of recruiting political elites, the characteristics of the political system, and inherited governance practices). Thus, policy robustness becomes less a matter of policy design and more a matter of political-institutional design.

## 5 | CONCLUSION

In this article, we have reasoned about some shortcomings of the recent literature on policy robustness in ensuring those unplanned responses by frontline actors that are an inescapable necessity for dealing with turbulence and

crisis. We did this by analyzing the characteristics of some emblematic unplanned responses (that we have categorized in terms of thinking outside the box, improvisation and fast learning) that emerged during the first response to COVID-19 and by adopting the theoretical lenses of the crisis management literature and organizational theory. Accordingly, we have suggested that policy robustness depends not only on a proper organizational and institutional design but also on some enabling conditions that should be present in normal times to be effective in critical times.

These conditions include the following: (1) coordinated autonomy, that is, the system capability to find a dynamic equilibrium between centralization and decentralization to allow frontline actors' autonomy and to extend local solutions that prove effective to the entire system; (2) training for unplanned behaviors through the design of processes, procedures, and practices that allow the activation, when needed, of the discretion of street-level operators and that are capable of institutionalizing attitudes toward self-reflection and self-assessment and to a reporting culture; and (3) the capacity of the political system to lead and appropriately coordinate organizational autonomy and frontline actors' discretion as pillars to guarantee robust responses in the face of systemic crises.

Necessarily, the causal relevance of the three proposed enabling conditions needs to be empirically tested by focusing on at least three analytical dimensions.

First, there is a need to collect more systematic and comparative data on "unplanned behaviors." This would help develop a more fine-grained empirical perspective on these events, to obtain eventual variance in terms of the type and density of these behaviors in various categories of crisis, and to collect evidence on the existence of eventual patterns of unplanned behaviors.

Second, there is a need to pair the systematic and comparative collection of data with a careful consideration of whether and how contextual dimensions such as political regime, social culture, socioeconomic conditions, and existing policy arrangements influence the relationships between policy robustness and unplanned responses in times of turbulence and crises. In this way, it would be possible to test whether and how the enabling conditions that have been highlighted in this piece work and whether and how they are transferable and generalizable.

Finally, there is the need to deepen the understanding of the political foundations of policy robustness. Sørensen and Ansell (2021) have emphasized that political robustness is higher when coalition-building attitudes, nonpartisan politics, legitimate political representation, and continued dialog between political élites and citizens are present. However, these factors look very general and need to be operationalized in context. This means also focusing on those meso and micro conditions that drive political agencies to do their work via coordinated organizational autonomy and political discretion to deal with turbulence and crises. Thus, for example, the cultural and professional backgrounds of politicians could make a difference when they and their existing networks are asked to respond to unforeseeable events under pressure.

Overall, we know that unplanned behaviors always emerge during crises and that many of them are very helpful. It is time to better understand how they work and how to make them a real, structured, and "planned" resource for dealing with crisis and turbulence. It is time, then, to increase our capacity to prepare for the unplanned.

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## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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## ENDNOTES

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