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# Health Crisis at the EU's HERA: Amplifying Partial Organizing with Resourcing for Stability, Agility, and Evolvability

Liisa Välikangas, Marijane Luistro-Jonsson, Sirka L. Jarvenpaa

## Abstract

What design recommendations can be made for European Union (EU) organizing its health crisis preparedness and emergency response? The EU has recently established the Health Emergency Response and Health Authority (HERA) for coping with crises. However, as an international organization that lacks a legal means of extending its mandate over EU member states, HERA can potentially fail in its mission. To help prevent this potential failure, we make design recommendations that draw on resourcing theory to complement the limited — or partial — organizing capabilities of HERA. The design recommendations are tailored to three schemas that the analysis of the stakeholder feedback suggests: stability, agility, and evolvability. We outline HERA's current actions and deliverables as mandated in its founding and suggest additional examples of ways to amplify crisis preparedness and emergency response. These recommendations stem from the proposed resourcing perspective within the constraints of an international, partial organization. We conclude with implications for future research and practice, focusing on how stability, agility and evolvability can amplify the HERA's ability to meet its expectations.

*Keywords:* crisis preparedness, emergency response, partial organization, resourcing, resourcing theory, schemas, international organization, design, EU, HERA

## 1. “TOWARD EUROPEAN HEALTH UNION”: HERA AS AN INITIATIVE FOR CRISIS PREPAREDNESS AND EMERGENCY RESPONSE

The COVID-19 pandemic has challenged international organizations, ranging from the European Union (EU) to the World Health Organization (Van Hecke et al. 2021), posing questions about the nature of these organizations and their capabilities. The competencies of the EU in response to health crises are defined in its founding treaties. These competencies, defined in narrow terms (Renda and Castro 2020; European Court of Auditors 2016), are further curtailed by the member states’ control over health policies and national infrastructures (Brooks and Geyer 2020).

In Ahrne et al.’s (2019) terms, the EU is a partial, member-based organization that lacks a full suite of organizational elements at its disposal — such as monitoring or sanctions — for effecting decisions (see also Ahrne and Brunsson 2011). Therefore, its ability to take action is particularly limited in the area of health care (Renda and Castro 2020), specifically in supporting national policies and encouraging coordination (Brooks and Geyer 2020). Indeed, there is criticism of the EU’s uncoordinated and ineffective response to the COVID-19 pandemic (Van Hecke et al. 2021) but also hope that the “new building blocks of European Health Union,” including the founding of a new agency, the Health Emergency Preparedness and Response Authority (HERA), will add to the EU’s ability to cope with future crises. The founding of HERA is “carefully laying the groundwork for potential expansion of [EU’s] areas of activity, whilst avoiding formal treaty change” (Brooks and Geyer 2020, p. 1073).

In this article, we reflect on how HERA might be further designed to accomplish its mission. In setting the mission for HERA, the European Commission (2021a) stated that there was a “demonstrated ... need for coordinated EU level action to respond to health emergencies” and that it had a legal basis for taking action to improve public health and combat serious cross-border threats to health. The COVID-19 pandemic...

“...revealed gaps in foresight, including demand/supply dimensions, preparedness and response tools. A European HERA is a central element for strengthening the European Health Union with better EU preparedness and response to serious cross-border health threats, by enabling rapid availability, access and distribution of needed countermeasures.” (European Commission, 2021a)

The HERA was launched in September 2021 by the European Commission as a “next step toward completing the European Health Union” (European Commission, 2021b). The member

states formed a HERA board, with the European parliament acting as an observer. Its advisory forum consists of external stakeholders (industry, academia, and civil society) and a HERA network with similar national or regional authorities. The Health Crisis Board, which similarly consists of member states, is tasked with coordinating actions in response to a crisis. The Health Emergency Preparedness and Response Authority's budget for 2022–2027 consists of six billion euros from the Multiannual Financial Framework and NextGenerationEU and 24 billion euros invested by other EU programs (such as Recovery and Resilience Facility), totaling 30 billion euros.

The Health Emergency Preparedness and Response Authority's mandate is described as one of preparedness and emergency response:

“Today, the European Commission is launching the European Health Emergency preparedness and Response Authority (HERA) to prevent, detect, and rapidly respond to health emergencies. HERA will anticipate threats and potential health crises, through intelligence gathering and building the necessary response capacities. When an emergency hits, HERA will ensure the development, production and distribution of medicines, vaccines, and other medical countermeasures – such as gloves and masks – that were often lacking during the first phase of the coronavirus response.

#### **Before crises: preparedness**

Before a health crisis, in the “preparedness phase”, HERA will work closely with other EU and national health agencies, industry and international partners to improve EU's readiness for health emergencies.

#### **During a health crisis: emergency response**

In case a public health emergency at EU level is declared, HERA can quickly switch to emergency operations, including swift decision making and the activation of emergency measures, under the steer of a high-level Health Crisis Board. It will activate emergency funding and launch mechanisms for monitoring, new targeted development, procurement and purchase of medical countermeasures and raw materials.” (European Commission, 2021c)

Overall, HERA is an international organization that is dependent on its member states but has a separate identity and budget. It is a partial organization in the sense that its formal means of sanctioning are limited and its actions are dependent on member organizations (states) that have European-treaty, given autonomy over their health policies. Through its secretariat, HERA may be able to “name and shame” dissidents (Ahrne and Brunsson 2012) or encourage participation using integrative market benefits or administrative routines by providing expert advice that is

difficult to refute. In the end, however, HERA appears to reflect the challenges of its founding organization, the EU, and has few independent means of crisis preparedness and emergency action. As an international, partial organization, HERA is likely to benefit from stability (Berkowitz and Dumez 2016; Ahrne and Brunsson 2012) but lacks the ability to decisively act in a crisis and mount an emergency response (Van Hecke et al. 2021). Arguably, crisis response may be the very weakness of a partial organization designed to operate at a low cost (Berkowitz and Dumez 2016; Ahrne and Brunsson 2008), often manifesting inertia (König et al. 2012) and lacking organizing elements for decision making (Ahrne and Brunsson 2005). Hence HERA may well fail in its important mission in providing health crisis response within EU.

In considering design recommendations from the perspective of accomplishing HERA's challenging mission, we begin by reviewing the literature on partial organizations, crisis preparedness, and resourcing theory. Section 3 focuses on empirically investigating the feedback obtained from the stakeholders upon HERA's founding and thematically analyzing their suggested actions. Section 4 links the findings to resourcing mechanisms, Section 5 presents the implications and our design recommendations for HERA resourcing, and Section 6 concludes.

## **2. THEORETICAL BACKGROUND**

### **A partial international organization**

Ahrne and Brunsson (2011) define a partial organization as a formal organization seeking to organize collective action (Berkowitz and Dumez 2016) yet lacking a full range of organizing elements, including membership, hierarchy, rules, monitoring, and (positive and negative) sanctions. The authors suggest such partial organizing represents much of the "contemporary global order" (Ahrne and Brunsson 2011:83). Berkowitz and Dumez (2016, p. 150) underline the importance of "global collective action organizing" (see also Gulati et al. 2012). Perceived as structurally weak (Berkowitz and Dumez 2015), such partial organizations nevertheless achieve external influence (Ahrne and Brunsson 2008). Berkowitz and Dumez (2016, p. 149) suggest such "collective action at the level of organizations" includes sustainable development, human rights, and corporate responsibility.

International organizations that consist of other organizations, such as the EU, are described as partial organizations (Ahrne and Brunsson 2019), with a “weaker position toward their members than individual-based organizations usually have.” While such partial organizations do not have formal authority over their members, membership still has consequences. Such organizations can lead to consensus decision-making, shared standards of behavior, reputational impacts, and adjustments to the decision-making processes of a meta-organization, which may have a significant secretariat with influential experts on its payroll. As Ahrne, Brunsson and Seidl (2016) note, while partial organizations lack formal organizing elements, they also develop standards and other forms of rules for common behavior (Ahrne and Brusson 2019; Rasche and Sield 2019). In part due to their low-cost structures, partial organizations tend to exhibit stability (Berkowitz and Dumez 2016) but also manifest inertia in face of change (König et al. 2012).

Partial organizations have been studied in multiple contexts. Laamanen et al. (2020), in a study of a community food bank, emphasize that member reflexivity is important for the emergence of partial organizations over time. Den Hond et al. (2019) suggest that partial organizing outside the corporate hierarchy may lead to innovation. Berkowitz and Souchaud (2019) find that self-regulation through partial meta-organizing in a crowdfunding platform contributes to hybrid governance. Sydow (2019) describes interorganizational networks, such as airline alliances, as partial organizations that may even exceed the organizational elements of formal organizations. These various contexts suggest the versatility of partial organizing.

### **Crisis preparedness and emergency response as partial organizing**

The crisis preparedness literature manifests elements of partial organizing, though these are not explicitly linked to theorizing. Incomplete organizing forms, such as interorganizational networks, platforms, and communities, have been noted to play an increasing role in emergency response, as documented by Beck and Plowman (2014) and others (Majchzak et al. 2007; Schakel and Wolbers 2021; Wolbers et al. 2018). Often, the response does not rely on existing institutional structures or decision-making hierarchies but, rather, on self-organized action (Williams and Shepherd 2016; Kornberger et al. 2019). Beck and Plowman (2014) report on the “chaos of early hours” in terms of the interorganizational response to the Columbia shuttle disaster. The emergent response was one of asking “Can we help?” followed by setting goals, co-locating, and developing collective identity. Spontaneous responses were resorted to even when “any plan ... was lacking” (Beck and Plowman 2014:1241). Collectives thus identified

themselves as members of the response operation while responding as best they could in real time.

Beck and Plowman (2014:1242) underscore such participatory action, emphasizing a “try it and see if it works” attitude. There was no time to develop a holistic understanding of the situation or complete the organizing. Responding fast was of primary importance. In a loose network of first respondents, Majchrzak et al. (2007) similarly report how the emergency response was initially dependent on autonomous action by local response groups because it was impossible to predict who would be able to respond and with what resources and expertise. Such fast action could not rely on established and proven routines but, rather, required improvised and novel timely action. Cultivating such voluntary, innovative action is critical in resource-scarce contexts in an unprecedented crisis, when decision-making is best described as “feeling out of the truth in the midst of fog” (Kornberger et al. 2019, p. 255). Collective identity is built by coordinating diverse actions and making these actions visible in varied forums and other cross-referencing infrastructures that can expand the membership of responding actors and groups, enhance their safety, and coordinate expertise (Majchrzak et al. 2007).

The crisis response literature seems to be reminiscent of partial organizing in that, in a crisis, there is not necessarily time to develop a complete organization with its hierarchical decision making in order to take emergency action (Beck and Plowman 2014). Where command and control approaches have traditionally existed (William and Shepherd 2016), formal organizations often failed in agility of their responses to non-routine disasters (Drabek and McEntire 2003). Indeed, recent research in the emergency and disaster literature underscores not only the immediate response that produces momentary solutions but also how such responses must transition and evolve between tightly coupled, loosely coupled, and decoupled arrangements (Schakel and Wolbers 2021). Extreme events call for arrangements for institutions and communities that will ensure preparedness for the future (Berthod et al. 2017; Farny et al. 2019; William and Shepherd 2016).

The organizing models offered for crisis preparedness in heterogeneous environments are “easily simplified and stereotyped, and fail to capture the complexity of both the crisis and the organization” (Olofsson 2011:217). Fleischer (2012) argues that crises require the consideration of time in terms of both constraints (e.g., the restricted amount of time within which an activity must be completed) and resources (e.g., various time tactics that impact how

time unfolds objectively and is experienced subjectively). The complexity of organizational arrangements and temporal perspectives is also recognized across multijurisdictional distances, where success is not just a question of fast action but also slower stable and evolving responses (Steelman 2021). The complexities further escalate in transboundary crises that transcend geographical, policy, public-private, social, and legal boundaries (Ansell et al. 2010). Such an awareness of complexities has pointed to the need to better understand the resourcing perspectives of crisis response (Feldman 2004; Quick and Feldman 2014).

Partially organized environments may have to rely on self-organized or autonomous improvisation and imagination for agile action. Such agility requires acting in the “thick of time” (Garud and Gehman 2012, p. 989). Agility is evident, for example, in the need to adopt a ‘fail fast, fail often’ approach to make [the] most efficient use of time” (Gerster et al. 2021, p.135). However, narrating a situation of duress may also help mobilize action (Quinn and Worline 2008). Kornberger et al. (2019) describe how crises imply a loss of orientation that can be used to inform any cognition and action.

In building post-crisis institutions, Farny et al. (2019) discuss how collective synchronized emotional experiences are critical to embedded institutional arrangements. Berthod et al. (2017) argue that high-reliability interorganizational networks with permanent structure must evolve multiple layers of coordination (e.g., autonomous, participatory, collaborative, and assertive) during preparedness and be able to quickly switch among them during crises, sometimes without any interaction (Moynihan 2009). Such evolution to promote learning from past crises requires broad information sharing, cultivating understandings and interpretations from different stakeholders’ perspectives; the learning is embedded in individuals and groups but also in routines, institutions, and infrastructures (Sharma et al. 2021).

### **Amplifying Partial Organizations with a Resourcing Theory**

In considering how partial organizations may develop crisis response capability, we build on the resourcing theory (Feldman 2004). Rather than focusing on the innate features of the resources or assets available, as is typical in resource-based theories of the firm, the resourcing theory focuses on resources in use, in other words, “how organizational members take up and use assets as they pursue activities in line with what they wish to make happen in the world” (Feldman and Worline 2011, p. 2). This is fitting because Ahrne, Brunsson, and Kerwer (2019) discuss how partial organizations face problems of organizing collective action without

autonomous actorhood or sufficient resources, for which they must compete with their own members. The resourcing of action is often left to the members, while at the collective level, the focus is on statements and mission talk.

Because partial organizations may lack the full suite of formal management means, the resourcing theory helpfully suggests “resources in context as mutable sources of energy rather than as stable things independent of context” (Feldman 2014, p. 295). Resources are thus dynamically enacted rather than owned or allocated. Resources are important for maintaining organizations but not perceived as fixed entities (Auschra and Sydow 2022). Deken et al. (2018, p. 1223) define resourcing as “the process through which actors turn potential resources [i.e. assets]—technologies, knowledge, material objects—into resources-in-use to accomplish objectives.”

One characteristic of the resourcing theory is its ampliative nature, in which cycles of resourcing enforce on another through the mutual interaction of resources, actions, and schema (Feldman 2014, p. 296): “Resources enable actors to create schemas.” These schemas direct further action and its resourcing. A recent study by Sutter et al. (2022) found that the schemas held by various actors allowed or limited access to resources for poverty alleviation. Sonenschein (2014) found that enacted schemas such as imagined ownership added to the ampliative nature of resourcing when employees and managers used resources in dynamic ways in a fast-growing retail company. Interestingly, one employee is quoted as saying that “[The enactment of ownership schema] kind of happened because [the founders] couldn’t manage everyone...We did not have the staff to do it. We did not have the resources to do it. We did not have the processes to control it” (Sonenschein 2014, p. 823).

The resourcing theory provides three meta mechanisms for resourcing action: mutual adjusting, juxtaposing, and narrating. We briefly discuss and give some examples to concretize these mechanisms behind resourcing. In *mutual adjusting*, both the actor(s) and the artifact (the resource) respond to a particular use endogenously. An example of mutual adjusting may be rehearsing for crisis responses in the form of virtual games in which parties learn to collaborate in different situations. At times of crisis, mutual adjusting may also be called upon to think about the available resources creatively (Jaquith 2009; Beck and Plowman 2014), perhaps using the perceived resource scarcity as a trigger for innovation (Weiss et al. 2014). The relationship between the crisis and its resourcing could also be reframed in such a way that novel strategies can be found under time pressure (Hoegl et al. 2010). Mutual adjusting can be “active waiting”

– a period of building joint leverage before taking action (Paukku and Välikangas 2021). It may also imply a strategy of “ever closer union,” for example, in which the union works toward building interdependence in terms of resourcing but may utilize strategies such as transposition (Berthod et al. 2021), in which resources may be conceived as temporally (re)produced across members rather than controlled centrally. A well-known example is distributed computer capacity, which is used for complex problem solving that no one computer can tackle alone.

*Juxtaposing*, a mechanism for cultural change (Howard-Grenville et al. 2011), is about bringing “the familiar [together] with the unfamiliar in a way that creates liminality as a resource for change” (Feldman and Worline 2011, p. 7). Various practices interacting liminally, with the help of boundary objects (Bechky 2003), may create new resources embedded in social contexts (Berthod et al, 2021). Feldman and Worline (2011:8) suggest bringing various cognitive framings, diverse teams, and knowledge backgrounds, even feelings, to work “side by side” together and thus enable new ways of working together. Majchrzak et al. (2007) suggest that making action visible in real time can create liminality. This is in line with the Clausewitzian *coup d’œil* - a way to assess the situation amid the fog of events for the sake of taking timely action in the present, creating a relationship between what is happening and the action to be taken (Kornberger et al. 2019). Juxtaposing should be a question of developing liminal interfaces that are well-rehearsed and robust yet help maintain a joint spirit (*courage d’esprit*). Digital platforms may invite participation from multiple competing organizations, even though the organizations remain autonomous while contributing to the platform (Gawer 2021).

The third mechanism, *narrating*, is about “provid[ing] a means of ordering events into a past, present, and future, and in so doing, enabl[ing] people to know and make sense of the world around them” (Feldman and Worline 2011, p.8). It may be important to maintain a narrative that encourages continuous learning from the past to be applied to future crises (Lee et al. 2020) because organizations tend to forget after a crisis is perceived to be over (Haunschild et al. 2015). Narrating seems to provide a powerful way of developing collective identity in a crisis, for instance narratives of stability can emphasize assets (Feldman and Worline 2011), while the narratives of agility focus on resourcing (Quinn and Worline 2008). Quinn and Worline (2008) report on the hijacked flight UA 93, aboard which the passengers took heroic joint action to prevent the plane from being used as a weapon. Narrating may also be used to nurture evolvability by explicitly tying the past to the present and future for the sake of strategic renewal (Dalpiaz and DiStefano 2018; Vaara et al. 2016).

We argue that such resourcing may be complementary to partial organizing, which is limited in its organizing capabilities (Ahrne and Brunsson 2011). Absent a hierarchical authority or an external rule-maker, a resourcing perspective may strengthen the means of partial organizing within its environment (Sydow 2019). The resourcing perspective, with its schemas, actions, and mechanisms, may provide an international, partial organization with further means of amplifying its required capabilities for emergency response and crisis preparedness: the required capabilities call for building trust and collective identity (Reypens et al. 2020; Beck and Plowman 2014) and emphasize self-organizing in an emergency (Majchzak et al. 2007; Beck and Plowman 2014; Kornberger et al 2019). There is also a need to learn together over time (Garud et al. 2011; Lee et al. 2020).

In the context of the resourcing theory, we interpret these crisis preparedness perspectives as potential schemas. The schemas can be seen as “shared understandings” in pursuit of network goals (Sutter et al. 2022), not unlike the network rules of Auschra and Sydow (2022:5), which may be reinforced and, thus, institutionalized or changed by later resourcing actions.

Table 1 summarizes the resources and actions (Feldman 2004), together with the resourcing mechanisms (Feldman and Worline 2011), as they relate to the HERA’s three missions, suggesting a variety of schemas (to be empirically identified in the next section). The resourcing mechanisms can have applications beyond a particular mission, but here they are presented in this particular context for illustration purposes.

**Table 1. Resourcing in the Context of Crisis Preparedness and Emergency Response**

<b>HERA Mission/ Objectives</b>	<b>Resources</b>	<b>Actions</b>	<b>Mechanisms</b>
“To strengthen health security coordination within the Union during preparedness and crisis response times, and bringing together the Member States, the industry and the relevant stakeholders in a common effort”	Relationships, Experience, Orchestrators	Identity- or trust - based	Mutual adjusting, both the actor and the resource adjust to a crisis (for example, rehearsing various crisis responses and particular roles and routines, including virtual games)

<p>“To address vulnerabilities and strategic dependencies within the Union related to the development, production, procurement, stockpiling and distribution of medical countermeasures”</p>	<p>Practices, Experiments, Expertise, Infrastructure, Narratives</p>	<p>Autonomous, Improvisational, innovative</p>	<p>Juxtaposing, inviting diversity and paying attention to the social embeddedness of resources (for example, introducing multi-disciplinary teams to work under varying crisis situations; developing real-time support or collaborative structures)</p>
<p>“To contribute to reinforcing the global health emergency preparedness and response architecture”</p>	<p>Participants, Emotions, Communities, Learning</p>	<p>Collective, Reflective</p>	<p>Narrating, providing a way to make sense of the events over time (for example, learning from past crisis events in the context of potential responses to future events; from “best practices” to “next practices”)</p>

**3. STAKEHOLDER FEEDBACK UPON HERA’S FOUNDING**

In this section, we analyze the feedback of 154 EU stakeholders reacting to the document “Inception Impact Assessment to establish a European Health Emergency Preparedness and Response Authority.” The document aims to inform EU stakeholders about the Commission’s intended initiatives, elicit their reactions, and allow the contributors to participate in the succeeding consultation activities. This feedback from public authorities, trade unions, NGOs, academic and research institutions, EU and non-EU citizens, business associations, companies, and business organizations was submitted and gathered during a four-week period (January–February 2021) through the EU webpage. We limit our analysis to the initial feedback because the second round of internet-based public consultation, during the succeeding months, used a more structured questionnaire with pre-determined choices, limiting the expression of informants, which is crucial to our interpretative analysis. Succeeding targeted consultations with stakeholders through high level groups and bilateral meetings were also not included in our analysis because of limited access. The Commission’s adoption and formal decision to establish HERA occurred in September 2021.

We view the initial feedback of the stakeholders as an external source of resources and perspectives for a partial organization. The study went through an abductive process, wherein we started looking into partial organization and resilience/crisis literature, initially considering

time as a resource. Then as we analyzed the data, the emerging concepts were related back to resourcing theory, particularly the resourcing mechanisms and were eventually developed into design recommendations for HERA (see Appendix 1 for an overview of the process). In thematically analyzing the empirical data, we went through different rounds of analyses, of which two of the researchers had independent codings, jointly discussed and agreed upon after the coding. The third researcher checked the consistency and added a theoretical perspective.

Using the Gioia method for the empirical data, we began with the open coding of the stakeholders' feedback to identify categorical patterns as descriptive first-order concepts, grouped the concepts into analytical second-order themes, and eventually linked the categories that emerged to theoretical aggregate dimensions (Gioia et al. 2013; Gehman et al. 2018; Langley and Abdallah 2011). The initial open coding focused on identifying the recommended actions on the part of the stakeholders, and a sample is shown in Appendix 2.

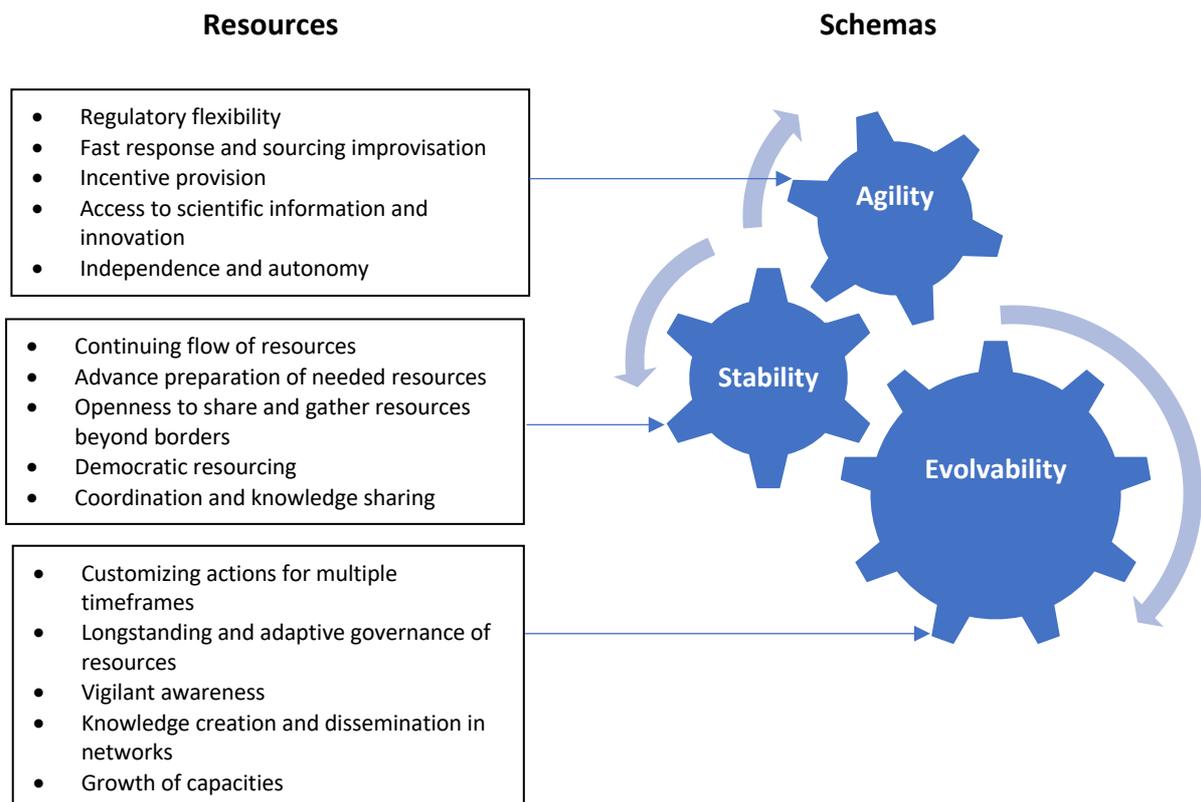
### **Three Emergent Schemas: Stability, Agility, and Evolvability**

Our analysis shows that the stakeholder feedback focused on mobilizing resources and eventually gravitated toward the schemas of stability, evolvability, and agility. The details of the thematic coding are shown in Appendix 3, and below, we provide an overview of the results.

First, *stability* appeared to be an important consideration, arising from the recommendations stressing the importance of having a continuous flow of resources, advance preparations, openness, democratic resourcing, coordination, and knowledge sharing. Establishing long-term policies, equipment, infrastructures, and financial support indicate and require a “continuous flow of resources.” Prioritized actions centered on the “advance preparation of needed resources,” such as early awareness of potential problems, advanced purchase agreements, and supply contracts. Implementing coordination and cooperation within and outside the EU creates an “openness to share and gather resources beyond borders.” Similarly, establishing partnerships with different actors outside the union can lead to “democratic resourcing.” “Coordination and knowledge sharing” can result from measures such as clearing relationships with authorities, coordination with existing structures and competencies, and the sharing of fact-checks. Because these resources contribute to stability, they imply a goal of constancy and permanence for the sake of a collective democratic ethos and trust-building.

Secondly, there was a concern for *agility* in recommendations emphasizing a “fast response and sourcing improvisation,” with quick decisions and rapid recruitment, as well as “regulatory flexibility” in terms of contracts, protocols, approvals, and licensing. These quick actions require a reduction of bureaucracy and “incentive provision.” The recommendations also emphasize the importance of having “access to scientific information and innovation” and financial and structural sufficiency, pointing toward “independence and autonomy.” The recommendations related to agility show the need for the consideration of urgency and autonomy.

Finally, *evolvability* also emerged as an important concern, as reflected in “customizing activities for different time-frames,” such as for peacetime and pre-peri-post-crisis periods, as well as in “long-standing and adaptive governance,” with long-term commitment and adjusted planning and capabilities. A “vigilant awareness” of unexpected and current issues, such as climate change and migration, additionally contributes to sense-making. The resulting reflexivity is complemented by the knowledge flows embodied in “knowledge creation and dissemination in networks” in the form of predictive models and early research, which are transmitted in network hubs and structures, as well as in the “growth capacities” involved in scaling-up. Figure 1 provides an overview of our empirical findings.



**Figure 1: Empirical Findings: Three Emergent Schemas**

#### 4. ANALYSIS: TOWARD HERA’S RESOURCING MECHANISMS

The feedback provided to the European Commission upon the founding of HERA highlighted the key role of three resourcing schemas: agility, stability, and evolvability. These schemas are mirrored in HERA’s mission. “[S]trengthen[ing] health security coordination within the Union during preparedness and crisis response times, and bringing together the Member States, the industry and the relevant stakeholders in a common effort” seems to relate to stability or developing preparedness in times of non-crisis. The second mission of “address[ing] vulnerabilities and strategic dependencies within the Union related to the development, production, procurement, stockpiling and distribution of medical countermeasures” appears to require agility as a resourcing schema. The third mission of “contribut[ing] to reinforcing the global health emergency preparedness and response architecture” seems to be associated with evolvability as a resourcing schema.

Below, we consider the implications for the resourcing mechanisms while drawing on the empirical feedback from the stakeholders. The discussion suggests the interdependence of the schemas and their resourcing in that maintaining all three schemas appears to be necessary to accomplish HERA's mission.

### *Mutual Adjusting*

In times of non-crisis or stability, mutual adjusting, as a resourcing mechanism, implies a focus on resources-in-use. The empirical feedback received from stakeholders draws attention to long-term funding, openness to knowledge sharing, and making advanced preparations, as well as “democratic partnerships.” One of HERA's tasks that is fitting in this regard is “compiling and assessing lessons learnt from the current pandemic at EU and national level (best practices, major problems, critical questions, etc.)” Mutual adjusting as a period of building joint leverage can also be seen in the advance purchase agreements of COVID-19 vaccines. Evolvability in terms of mutual adjusting can arise from establishing a collaboration between the EU and US in terms of the manufacturing of vaccines.

### *Juxtaposing*

The stakeholder feedback emphasized issues such as taking action, including improvisation, while maintaining autonomy. Juxtaposing, as a resourcing mechanism, suggests finding boundary objects or liminality so as to cross from the familiar to the unfamiliar or from the singular to what is shared or move from the past to the future. Regulatory flexibility, fast responses, and access to scientific information may support such juxtaposing, and the members can still maintain their independence, as noted important in the feedback. Addressing market challenges and failures and boosting the Union's open strategic autonomy may imply such juxtaposing, which balances stability and agility.

In a partial organization, agility suggests that joint action is possible, even urgent, while maintaining autonomy. Promoting advanced R&D regarding medical countermeasures and related technologies may imply such a potential. In times of stability, it may be important to create potential boundary objects, which can be activated in a crisis, whether they are strategic, infrastructural, or behavioral.

Given the need for evolvability, HERA might learn from experiences in digital platforms that are able to invite participation from multiple competing organizations, even though the

organizations remain autonomous while contributing to the platform The Health Emergency Preparedness and Response Authority would coordinate via interfaces (such as principles) and boundaries (such as membership rules).

*Narrating*

Multiple positioning, sense making and learning, and knowledge flows, as well as vigilant awareness and the capacity to develop scale during crisis response, seem important in the stakeholder feedback related to narrating. A partial organization such as HERA could thus use narrating as its design principle to bridge stability, agility, and evolvability. Starting from a focus on the assets at its disposal, HERA could emphasize its capacity for resourcing. In this way, mutual adjusting and juxtaposing could form part of its narrating from the present to the future. For example, actions under the HERA Incubator continue to rapidly detect and characterize new virus variants, adapt vaccines as necessary, and scale up existing production capacities. On a larger scale, there is a European partnership on transforming health and care systems over time through investments in far-reaching research.

As noted, HERA, as a partial organization, lacks hierarchical decision-making authority over member state health policies. Thus, it must resort to action that is limited in time and potentially distributed, including volunteer action. However, it is important for HERA’s evolvability to develop collective capabilities for such distributed action capability, perhaps switching between cognition and action while seeking an overview of the scene of action. Such an overview could help in making action visible and also in maintain learning even after a crisis has passed. Developing such complementarity on the part of agility and evolvability is challenging. However, HERA should be able to develop local action capability within each member state or region while reserving time for reflection during times of non-crisis (see e.g., European Court of Auditions 2016, The Independent Panel 2021). Table 2 provides a summary of resourcing mechanisms for the three schemas with action examples and results that HERA is tasked with and is expected to deliver. The three schemas together help amplify HERA’s ability to meet its mission.

**Table 2. Resourcing at HERA under Three Schemas: Action Examples and Deliverables**

<i>Resourcing Mechanisms:</i>	<i>Schema (1): Stability</i>	<i>Schema (2): Agility</i>	<i>Schema (3): Evolvability</i>
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<p>Partial Organization with Mutual Adjusting:</p>	<p>Focus on what current stakeholders are offering (e.g., computer capacity; existing health programs...)</p> <p>Coordination of resources; Analysis of compatibility and adjustment; (e.g., “Task 5. Strengthening knowledge and skills, Deliverable 5.1. Compiling and assessing lessons learnt from the current pandemic at EU and national level (best practices, major problems, critical questions, etc.).”</p>	<p>Focus on creative resourcing, improvisation, active waiting, and/or the reframing of the relationship between an ongoing crisis and required resources</p> <p>Rehearsal of on-demand joint action capability that is locally organized (e.g., “Task 4. Ensuring the provision of medical countermeasures”, Deliverable 4.4. Advance Purchase Agreements of COVID-19 vaccines.”)</p>	<p>Building resource interdependence; resource transposition between periphery and center</p> <p>Development of joint capabilities and infrastructures beyond local/national activities (e.g., “Task 6. International dimension, Deliverable 6.1. Establish linkages with the Joint EU-US COVID Manufacturing and Supply Chain Taskforce.”)</p>
<p>Partial Organization with Juxtaposing:</p>	<p>Building strategic, infrastructural, and behavioral boundary objects</p> <p>Develop possibilities for people to interact across professions, missions, etc. (e.g., “Task 3. Addressing market challenges and failures and boosting the Union’s open strategic autonomy, Deliverable 3.2. Analysis of three options for implementing a flexible (multi technology) EU manufacturing and innovation capacity for vaccines and therapeutics.”)</p>	<p>Making action visible in real-time; using time as liminality (e.g., <i>coup d’œil</i>)</p> <p>Juxtapose/bring together people with different practices to “enable new ways of knowing and doing” (Feldman &amp; Worline, 2011) (e.g., “Task 2. Promoting advanced R&amp;D of medical countermeasures and related technologies, Deliverable 2.1.5. with European Research Council, “Ex ante analysis of past/ongoing projects in scope with HERA”)</p>	<p>Developing well-rehearsed, robust interfaces</p> <p>Develop platforms with standardized interfaces for continuous communication (e.g., a wiki, “Task 1. Threat assessments and intelligence gathering, Deliverable 1.1. Proposal for a prototype EU interactive mapping platform on availability and supply chains production capacity including raw materials, and analysis of products under development (methodology for data collection and analysis, identification of existing tools/systems and legal assessment of data protection and confidentiality aspects”)</p>
<p>Partial Organization with Narrating:</p>	<p>Connecting past, present, future so as to make HERA a strategic actor</p>	<p>Narrating the importance of particular urgent collective actions and identities</p>	<p>Bridging stability, agility, and evolvability over time</p>

	<p>Moving beyond the last crisis (pandemic) to develop capacity to meet future emergencies (<i>e.g.</i>, “Actions under the HERA Incubator continue to rapidly detect and characterise new variants, adapt vaccines as necessary and scale up existing production capacities”)</p> <p>E.g., Deliverable 6.1. “Establishing cooperation mechanism with CEPI, Bill and Melinda Gates Foundation and other relevant organisations.”</p>	<p>Setting up the HERA Advisory Forum, Joint Industrial Cooperation Forum, and “cooperation with external stakeholders such as civil society, academia and industry representatives to ensure constant exchanges on preparedness priorities and coordination. In addition, a network will be set up of national or regional agencies in EU Member States responsible for carrying out tasks related to the availability and accessibility of relevant medical countermeasures in case of a health emergency.”</p> <p>E.g., “support access to EU-funded or EU-procured medical countermeasures and regional and local manufacturing capacities in third countries.”</p>	<p>Developing an “ampliative cycle” (Feldman &amp; Worline, 2011) of evolution toward crisis preparedness and emergency response so that lessons from past crises feed into the development of preparedness for new crises (<i>e.g.</i>, “Facilitate reinforced international cooperation and support for crisis-relevant medical countermeasures with global actors in case of health emergency to ensure their availability and accessibility”)</p> <p>E.g., “HORIZON-HLTH-2022-CARE-10-01: European partnership on transforming health and care systems.”</p>
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**5. DISCUSSION**

We build on the strengths of a partial organizing perspective – its capacity to deliver stability based on low-cost, long-term relationships – but complement partial organizing where it is collectively weakest in terms of crisis preparedness and emergency response, the very mission of the newly founded HERA. As an international, partial organization, HERA cannot exercise hierarchical decision making over its members in terms of health policy or action, which is a state privilege (Renda and Castro 2020; Brooks and Geyer 2020). Combining local and collective action is aligned with HERA’s mission of “work[ing] closely with other EU and national health agencies, industry and international partners to improve the EU’s readiness for health emergencies.”

## *HERA Design for Stability, Agility and Evolvability*

There are potential weaknesses on the part of HERA in terms of meeting its mandate, weaknesses that have been noted in the prior literature on European emergency response (Van Hecke et al. 2021; Renda and Castro 2020). We suggest that such weaknesses are due to HERA being a partial organization, rather than its “technocratic” nature (Brooks and Geyer 2020). The Health Emergency Preparedness and Response Authority can only act within its legal constraints (Speakman et al. 2017). It is doubtful that partial organizing alone will allow for “swift decision making and the activation of emergency measures,” as mandated, “under a high-level Health Crisis Board.” The Board would be handicapped in terms of taking determinate action under national competence. Thus, we are proposing resourcing as a complementary perspective suited to HERA’s mission but still within its constraints.

This perspective yields design recommendations rooted in the resourcing literature. Partial organizing with mutual adjusting suggests a focus on resources-in-use for stability, creative resourcing for agility, and building resource interdependence for evolvability. For example, one stakeholder suggested that “HERA’s support of the development capacity should not just focus on ‘end-stage research and development’ but should include early-stage research into potential future emerging diseases.” Partial organizing with juxtaposing requires the building of shared infrastructure (stability), making action visible in real-time (agility) and developing robust interfaces for collaboration (evolvability), as is typical for digital platforms. Another stakeholder proposed that “While well-established, existing surveillance systems as implemented today must be further strengthened, research and innovations are fundamental areas for rapid support and expansion towards better forecasting.” Partial organizing with narrating implies positioning HERA as a strategic actor creating stability, emphasizing the urgency and importance of its activities for agility and bridging the three schemas over time for the sake of evolvability. One stakeholder comment was forward-looking: “The stated goal of leveraging the power of artificial intelligence and predictive models to anticipate threats will require robust data sets that must include enough pediatric data to make accurate predictions about [this] population.”

We suggest the three schemas together amplify HERA’s ability to meet its expectations. Stability, focusing on resources-in-use, may invite creativity in the use of resources at times of crisis, promoting agility, and the existence of resource interfaces allows a focus on learning

together over time. However, such ampliative cycles are not self-evident but require HERA to maintain its multiple resourcing capabilities. Here there is an important task for HERA leadership: assess HERA’s actions from the perspectives of the three schemas and intentionally create resourcing opportunities that activate the different schemas. For example, HERA might be able to test its agility in a local crisis that may or may not be directly health related. Can HERA help in climate-related crises such as fires or increasing heat? Or how might stakeholders make their actions visible to learn about effective patterns of action at local and at EU level? Without such active engagement, HERA may digress into stability alone. See Table 3 for a summary.

**Table 3. Recommendations for HERA for Stability, Agility, and Evolvability**

<i>Stability:</i>	<i>Agility:</i>	<i>Evolvability:</i>
Focus on resources-in-use (assets) – what resources can HERA potentially mobilize at times of crisis (e.g., a resource registry in which members pledge resources for use in a crisis)?	Focus on creative resourcing, active waiting, and/or reframing of the relationship between an ongoing crisis and the required resources; e.g., develop a toolset that helps use (and share) resource scarcity as a catalyst for innovation	Building resource interdependence; resource transposition between the periphery and center; what social relationships mobilize resources in an emergency across the EU, and how?
Building strategic, infrastructural and behavioral boundary objects – how might HERA develop strategic infrastructure that allows the sharing of resources at times of crisis?	Making action visible in real-time; using time as liminality; building real-time platforms that indicate help needed and help given; developing predictive algorithms for crisis need and predictive diagnostic tools	Developing well-rehearsed, robust interfaces that enable autonomous action in a way that can be visible to all actors
Connecting past, present, and future so as to make HERA a strategic actor – how might HERA narrate its <i>raison d’être</i> so that it is seen as a critical organization to population health within EU member states?	Narrating the importance of particularly urgent collective action and identity – who are the heros?	Bridging stability, agility, and evolvability over time – maintaining the urgency to learn, even between crises, in the form of regular drills, rehearsals, challenges, competitions, and games; crowdsourcing solutions at times of non-crisis

### *Implications for Research*

We complement the partial organizing literature with resourcing for crisis preparedness. Hierarchical organizations have often failed (William and Shepherd 2016), but partial organizations also struggle to move forward in their emergent collective action (Majchrzak et al. 2007; Beck and Plowman 2014). Our challenge has been to develop design recommendations for an international organization such as HERA, which has a challenging mission but limited organizing means.

Our first contribution is to the perspective of partial organizing, introduced by Ahrne and Brunsson (2005). Partial organizations may exhibit stability (Berkowitz and Dumetz, 2016) but often fail in fast response to change (König et al. 2012), as is required in a crisis situation (Beck and Plowman, 2014). Hence, it is important to complement a partial organization's capabilities with a theory of resourcing that is based on enacting resources rather than owning or controlling them, something the EU's HERA is not able to do, due to the limits of its authority (Renda and Castro 2020; Brooks and Geyer 2020). This is common to many international organizations (Ahrne and Brunsson, 2012), thus suggesting a broad challenge.

In terms of the resourcing theory (Feldman 2004), we contribute to a crisis preparedness perspective. The resourcing theory suggests schemas that mobilize resources, and the three schemas developed in this article meet the challenges of crisis preparedness and response based on the HERA stakeholder feedback. The three schemas – stability, agility, and evolvability – are complementary to one another and help amplify HERA's capabilities. Stability indicates a focus on preparing for a future crisis rather than responding to an emergency. Agility is about the emergent, the urgency in which time itself may cause confusion and disorientation (Kornberger et al. 2019; Garud and Gehlman, 2012). Evolvability is about the past, present, and future in terms of learning, capability development, and sensemaking (Lee et al. 2020). Research on partial organizations has responded to Sydow's call (2019:207) to provide guidance on how “time and temporality, including tensions and contradictions, [operate] in a way that enhances the efficiency, effectiveness, and innovativeness of [a partial organization] and the satisfaction of its ... members or outside stakeholders.”

Our third contribution is to the literature on emergency response through interorganizational, international collaboration. Limited by treaty powers, such networks are heterogeneous and lack any shared authority. Thus, resourcing becomes potentially valuable not only because of

the urgency of action in an emergency but because it yields collaborative tools for organizing without an external rulemaker being present (Jarvenpaa and Välikangas 2021). By operating across the three temporal schemas, a partial organization may be able to make the transition from building preparedness to taking swift action when needed in the “thick of time.” Our contribution is exploratory, and future research should develop the temporal complexity of the design recommendations in more detail (see Ofori-Dankwa and Julian 2001). Such recommendations are also context dependent (Berends and Antinacopoulou, 2014). Some crises can be limited in duration (e.g., Kornberger et al. 2019), reducing their potential impact, but health crises can perpetuate themselves and have implications for multiple generations.

We call for research on time and temporality in the crisis preparedness literature. While grand challenges such as climate change have been studied from the perspective of time (Slawinski and Bansal 2015), less work exists on crisis preparedness and emergency response that accounts for their temporal complexity explicitly. Crises involve time-variant action, time-variant rules, and time-variant relationships. Still, there is a lack of in-depth longitudinal studies concerning how actors in partial organizations preparing for or responding to crises perceive, experience, navigate, and manipulate time. How do their actions enact and amplify agility, stability, and evolvability? As discussed above, in international partial organizations, actorhood is often viewed in terms of less expensive decisions, such as statements and talk (Ahrne et al. 2019). How does temporality impact cognition and emotion in these statements, and what are the implications for resourcing in terms of future crisis preparedness and response? As crisis response and preparation increasingly take the form of partial organizations that proliferate in the form of interorganizational networks, platforms, and communities, there is an urgent need for a deeper understanding of resourcing strategies that enact temporal schemas with stability, agility, and evolvability. How does a partial, international organization amplify its resourcing over time?

### *Implications for Practice*

Our study suggests implications for designing international organizations that have limited means to accomplish their mission. These limitations may be due to the authority given, or withdrawn, in treaties among the members, such as the EU and HERA, as discussed here. These limitations may be amplified by the lack of organizing elements that such international organizations can marshal. For example, they may not have the ability to impose sanctions or monitor performance in detail. Thus, such organizations must resort to other ways of striving

to achieve their mission, for example, inviting membership, defining rules for members, or setting standards. Such organizations may also have authority in terms of expertise. The EU and HERA can further fund research or shared projects that help develop shared capability.

Because international organizations are thus managerially limited, it is important to design them in view of their resources being something that members, not the organization itself, own and control. The design recommendations should consider mechanisms that evoke the mobilization and sharing of member resources in ways that are available for a treaty-bound or organizationally partial agency. We review these mechanisms in terms of their timeliness – under conditions of non-crisis (or stability), the urgencies of responding to an imminent crisis (agility), or learning over time (evolvability). These three temporal schemas define the priorities for resourcing operations. Rather than relying on structures or stated authorities, meaning that such international organizations may exhibit weakness, we suggest designing and rehearsing for action. Pursuing stability, it is time to build mutual resource dependence and action capability. Pursuing agility, it is important to enable immediate and multi-skilled autonomous action that is visible to all member for coordinative purposes. Pursuing evolvability, it is important to maintain learning, even when a crisis has ended. Such mutual adjusting of resources and capabilities, juxtaposing of skills and competences, and narrating of the mission provide inspiration for designing organizations that does not rely on their structural weakness in terms of action but, rather, their resourcing for building togetherness, mobilizing resources, and learning over time. Weak structures can thus be complemented with a timely action orientation.

## **6. CONCLUSION**

We find HERA potentially failing in its crisis preparedness and emergency response mission as a partial, international organization. In fact, HERA lacks the legal means to extend its mandate over member states. Thus, a perspective of resourcing that has capacity to complement partial organization is developed to support HERA's mission capabilities in this article. Building on partial organizing, the theory of resourcing, and the crisis response literature and analyzing the feedback that HERA stakeholders provided upon its founding, we suggest design recommendations that address the stability, agility, and evolvability HERA needs while drawing on resourcing strategies linked to mutual adjusting, juxtaposing, and narrating. As one

respondent providing feedback to HERA noted, “While an appropriate level of EU and national government and oversight is essential, and the need to interact with regulators and agencies crucial, HERA should be established in a forward looking, flexible, agile and pro-active manner.” In other words, HERA should have ampliative potential.

## REFERENCES

Ahrne G, Brunsson N (2011) Organisation outside organizations: The significance of partial organization. *Organization* 18:83-104

Ahrne G, Brunsson N (2012) How much do meta-organizations affect their members? *Weltorganisationen*, Springer, pp 57-70

Ahrne G, Brunsson N (2019) Organization unbound. In: Ahrne G, Brunsson N (eds) *Organization outside organizations: The abundance of partial organization in social life*. Cambridge University Press, pp 3-36

Ahrne G, Brunsson N, Kerwer D (2016) The paradox of organizing states: A meta-organization perspective on international organizations. *Journal of International Organization Studies* 7(1):5-24

Ahrne G, Brunsson N, Seidl D (2016) Resurrecting organization by going beyond organizations. *European Management Journal* 34:93-101

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* 18:195–207

Auschra, C. and Sydow, J. (2022), Resourcing goal-directed networks: Toward a practice-based perspective, *Journal of Public Administration Research and Theory*, April 2022:1–14

Bechky BA (2003) Sharing meaning across occupational communities: The transformation of understanding on a production floor. *Organization Science* 14(3):312-330

Beck TE, Plowman DA (2014) Temporary, emergent interorganizational collaboration in unexpected circumstances: A study of the Columbia space shuttle response effort. *Organization Science* 25(4): 1234-1252

Berends H, Antonacopoulou, E (2014). Time and organizational learning: A review and agenda for future research. *International Journal of Management Reviews* 16(4): 437-453.

Berkowitz H, Dumez H (2016) The concept of meta-organization: Issues for Management Studies, *European Management Review* 13:149-156

Berthod, O, Grothe-Hammer M, Müller-Seitz G, Raab J, Sydow J (2017) From high-reliability organizations to high-reliability networks: The dynamics of network governance in the face of emergency. *Journal of Public Administration Research and Theory* 27(2):352-371

Berthod O, Grothe-Hammer M, Hagen R, Sydow J (2021) Managing resource transposition in the face of extreme events: Fieldwork at the two public networks in Germany and the US. *Public Administration* 99(1):171-188

Brooks E, Geyer R (2020) The development of EU health policy and the Covid-19 pandemic: Trends and implications. *Journal of European Integration* 42(8):1057–1076

Dalpiaz E, Di Stefano G (2018) A universe of stories: Mobilizing narrative practices during transformative change. *Strategic Management Journal* 39(3):664-696

Deken, F., H. Berends, G. Gemser, and K. Lauche. 2018. Strategizing and the initiation of interorganizational collaboration through prospective resourcing. *Academy of Management Journal* 61(5): 1920-50

Den Hond F, Jarvi K, Valikangas L (2019) Partial de-organization for innovation and strategic renewal? A study of an industrial innovation programme. In: Ahrne G, Brunsson N (eds) *Organization outside organizations: The abundance of partial organization in social life*, Cambridge University Press, pp 359-389

Drabek TE, McEntire DA (2003) Emergent phenomena and the sociology of disaster: Lessons, trends and opportunities from the research literature. *Disaster Prevention and Management* 12:97–112

European Commission (2021a). Inception impact assessment - Ares(2021)674649. <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12870-European-Health-Emergency-Preparedness-and-Response-Authority-HERA-> Accessed 15 May 2021

European Commission (2021b). Commission decision of 16.9.2021 establishing the Health Emergency Preparedness and Response Authority. <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12870-European-Health-Emergency-Preparedness-and-Response-Authority-HERA-> Accessed 1 October 2021

European Commission, 2021c. European Health Emergency preparedness and Response Authority (HERA): Getting ready for future health emergencies. Press release, Brussels, 16 September 2021. [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_4672](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_4672). Accessed 01 November 2021

European Court of Auditors (2016) Dealing with serious cross-border threats to health in the EU: Important steps taken but more needs to be done. Special report no 28, Luxembourg, Publications Office of the European Union

Farny S, Kibler E, Down S (2019) Collective emotions in institutional creation work. *Academy of Management Journal* 62(3):765-799

Feldman MS (2004) Resources in emerging structures and processes of change. *Organization Science* 15(3):295-309

Feldman MS, Worline M (2011) Resources, resourcing, and ampliative cycles in organizations. *Oxford Handbook of Positive Organizational Scholarship*, Oxford University Press, New York pp 629-641

Fleischer J (2012) Time and crisis. *Public Management Review* 15(3):313-329

Garud R, Gehman J (2012) Metatheoretical perspectives on sustainability journeys: Evolutionary, relational, and durational. *Research Policy* 41:980-995

Garud R, Gehman J, Kumaraswamy A (2011) Complexity arrangements for sustained innovation: Lessons from 3M Corporation. *Organization Studies* 32(6):737-767

Gawer A (2021) Digital platforms and ecosystems: Remarks on the dominant organizational forms of the digital age. *Innovation, Organization & Management* 1-15

Gehman J, Glaser VL, Eisenhardt KM, Gioia D, Langley A, Corley, KG (2018) Finding theory–method fit: A comparison of three qualitative approaches to theory building. *Journal of Management Inquiry* 27(3):284-300

Gerster D, Dremel C, Conboy K, Mayer R, vom Brocke J. (2021). How Fujitsu and Four Fortune 500 companies managed time complexities using organizational agility. *MIS Quarterly Executive* 20(2):127-150

Gioia DA, Corley KG, Hamilton, AL (2013) Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods* 16(1):15-31

Haunschild PR, Polidoro F Jr, Chandler D (2015) Organizational oscillation between learning and forgetting: The dual role of serious errors. *Organization Science* 26(6):1682-1701

Howard-Grenville J, Golden-Biddle K, Irwin J, Mao J (2011) Liminality as cultural process for cultural change. *Organization Science* 22(2):522-539

Jarvenpaa S, Välikangas L (2021) Toward temporally complex collaboration in interorganizational networks. *Strategic Organization* 1-25

Jaquith AC (2009) The creation and use of instructional resources: The puzzle of professional development. Ph.D. Dissertation, Stanford University, School of Education, Stanford, CA

Kornberger M, Leixnering S, Meyer R (2019) The logic of tact: How decisions happen in situations of crisis. *Organization Studies* 40(2):239-266

Laamanen M, Moser C, Bor S, den Hond F (2020) A partial organization approach to the dynamics of social order in social movement organizing, approach to the dynamics of social order in social movement organizing. *Current Sociology Monograph* 68(4):520-545

Langley A, Abdallah C (2011) Templates and turns in qualitative studies of strategy and management. *Research Methodology in Strategy and Management* 6:201-235

Majchrzak A, Jarvenpaa, SL, Hollingshead, AB (2007) Coordinating expertise among emergent groups responding to disasters. *Organization Science* 18(1):147-161

Moynihan DP (2009) The network governance of crisis response: Case studies of incident command systems. *Journal of Public Administration Research and Theory* 19:895-915

Ofori-Dankwa J, Julian SD (2001) Complexifying organizational theory: Illustrations using time research. *Academy of Management Research* 26(3):415-430

Olofsson A (2011) Organizational crisis preparedness in heterogeneous societies: The OCPH model. *Journal of Contingencies and Crisis Management* 19(4):215-226

Paukku M, Välikangas L (2021) Harried or myopic leadership: An undue bias for action. In Örtenblad A (ed) *Debating Bad Leadership*, Palgrave Macmillan, Cham, pp 239-255

Quinn R, Worline M (2008) Enabling courageous collective action: Conversations from United Airlines Flight 93. *Organization Science* 19(4):497–516

Rasche A, Siedl D (2019) Standards between partial and complete organization. In: G. Ahrne & N. Brunsson (eds), *Organization outside organizations: The abundance of partial organization in social life*, Cambridge University Press, pp 39-61

Renda A Castro R (2020) Towards stronger EU governance of health threats after the COVID-19 pandemic. *European Journal of Risk Regulation* 11:273-282

Reypens C, Lievens A, Blazevic V (2020) Hybrid orchestration in multi-stakeholder innovation networks: Practices of mobilizing multiple, diverse stakeholders across organizational boundaries. *Organization Studies* 41(1):61-83

Ribes D, Polk J (2015) Organizing for ontological change: The kernel of an AIDS research infrastructure. *Social Studies of Science* 45(2):214-241

Schakel JK, Wolbers J (2021) To the edge and beyond: How fast-response organizations adapt in rapidly changing crisis situations. *Human Relations* 74(3):405-436

Sonenschein, S. (2014). How organizations foster the creative use of resources. *Academy of Management Journal* 57(3):814-848

Sharma A, Borah SB, Moses AC (2021) Responses to COVID-19: The role of governance, healthcare infrastructure, and learning from past pandemics. *Journal of Business Research* 122:597-607

Slawinski, N, Bansal P (2015) Short on time: Intertemporal tensions in business sustainability. *Organization Science* 26(2):531-549

Speakman E, Burris S, Coke R (2017) Pandemic legislation in the European Union: Fit for purpose? The need for a systematic comparison of national laws. *Health Policy* 121:1021–1024

Steelman T (2021) Pathways of representation in network governance: Evidence from multi-jurisdictional disasters. *Journal of Public Administration Research and Theory* 31(4):723-739

Sutter, C., Bhatt, B., Qureshi, I. (2022/Forthcoming) What makes resource provision an effective means of poverty alleviation? A resourcing perspective. *Organization Science*, Published online.

Sydow J (2019) The inter-firm network as partial organization? In: Ahrne G, Brunsson N. (eds) *Organization Outside Organizations*, Oxford University Press, pp 191-211

The Independent Panel (2021) COVID-19: Make it the last pandemic. World Health Organization

Vaara E, Sonenschein S, Boje D (2016) Narratives as sources of stability and change in organizations: Approaches and directions for future research. *Academy of Management Annals* 10(1):495–560

Van Hecke S, Fuhr H, Wolfs W (2021) The politics of crisis management by regional and international organizations in fighting against a global pandemic: The member states at a crossroads. *International Review of Administrative Sciences* 87(3):672-690

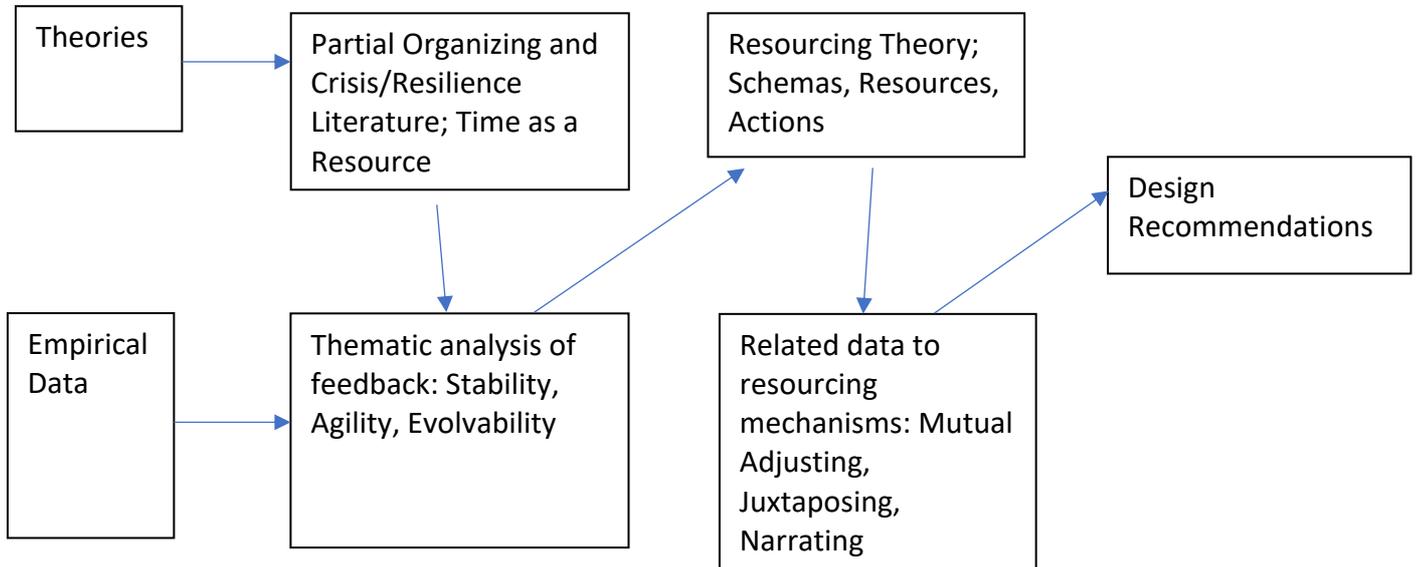
Weiss M, Hoegl M, Gibbert M (2014). Perceptions of material resources in innovation projects: What shapes them and how do they matter? *Journal of Product Innovation Management* 31(2):278-291

Williams TA, Shepherd DA (2016) Building resilience or providing sustenance: Different paths of emergent ventures in the aftermath of the Haiti earthquake. *Academy of Management Journal* 59(6):2069–2102

Wolbers J, Boersma K, Groenewegen P (2018) introducing a fragmentation perspective on coordination in crisis management. *Organization Studies* 39(11):1521-1546

## APPENDICES

### Appendix 1: Abductive approach

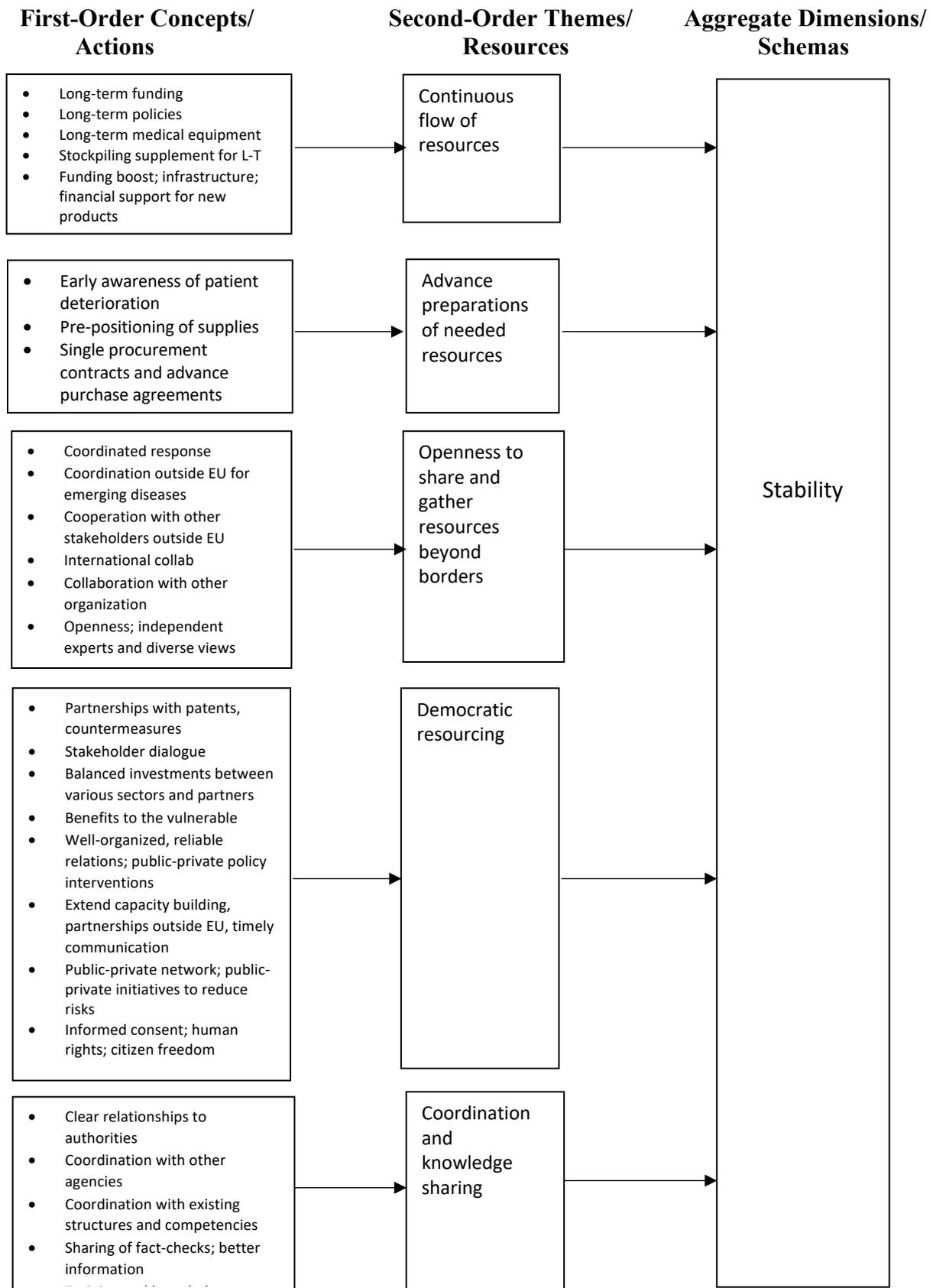


## Appendix 2: Coding Samples

Second-Order Themes	Representative Stakeholder Quotations on Needed Actions
<b>Stability</b>	
Continuing flow of resources	“Long-term government commitments and planning will also be necessary to keep certain technologies, knowledge, and manufacturing capacities available within the industry, especially for products that are not produced on a regular basis.”
	“They must be adequately funded and continuously expanded, and this funding must receive a boost in times between health crises, so these infrastructures stand ready to assist in the fight against the next threat.”
Advance preparations of needed resources	“The hypothesis of early interception of deterioration could be useful to prevent a potential increase in mortality, which unfortunately did happen last month in Italy.”
	“HERA support of development capacity should not just focus on ‘end-stage research and development,’ but should include early-stage research into potential future emerging diseases.”
Openness to share and gather resources beyond borders	“The way to ensure the preparedness is most effective is to build a system that is interconnected and promotes collaboration to address health threats, which can come from unanticipated directions.”
	“A consolidated viewpoint with the Authority provides perspective on market dynamics and needs, sizes, industry players inside and outside Europe, thus facilitating the creation of synergies in addressing vulnerabilities.”
Democratic resourcing	“This authority should have strategic partnerships with other regional authorities and institutions around the globe.”
	“HERA should be globally networked. HERA can only succeed with strong global partnerships and alliances, including with governments and research institutions in low- and middle-income countries.”
Coordination and knowledge sharing	“This includes coordination with the EU Member States in sharing information, assessing the needs, and ensuring a coherent EU-wide response.”
	“Besides methods and infrastructures, training and knowledge transfer will be crucial to successfully overcoming future cross-border health threats.”
<b>Agility</b>	
Regulatory flexibility	“The licensing agreements should seek to achieve broad public rights in both foreground and background intellectual property and, when possible, enable data, inventions, and know-how to immediately enter the public domain as global public goods.”
	“Sourcing from the European single market in times of necessity needs to come with regulatory flexibility for timely approvals and registrations.”
Incentive provision	“HERA strategic planning group should define and promote clear incentives for investment in cross-border R&I and ‘modern, flexible, and easily scalable manufacturing lines’ for medical countermeasures, inter alia via EU funding tools and PPPs.”
	“HERA should introduce subsidies and incentives for the development of new antibiotics that ensure private and not-for-profit developers will not require sales revenues linked to volume to ensure a return on investment.”
Fast response and sourcing improvisation	“Saving children’s lives in a future pandemic will require health systems to have the ability to rapidly source competent staff to care for an increased number of critically ill children.”
	“Therefore, at a minimum, HERA should have a permanent structure established with different degrees of operational roles and infrastructure that can be activated quickly when needed.”
Access to scientific information and innovation	“While well-established, existing surveillance systems, as implemented today, must be further strengthened, research and innovations are fundamental areas for rapid support and expansion toward better forecasting.”
	“Science-based intelligence can enable us to overcome cross-border health threats, if it is utilized appropriately, as shown in the current pandemic.”
Independence and autonomy	“It should be autonomous in decision-making, risk-taking, be allowed to fail given the nature of its investments and well-funded to address the long-term challenges.”

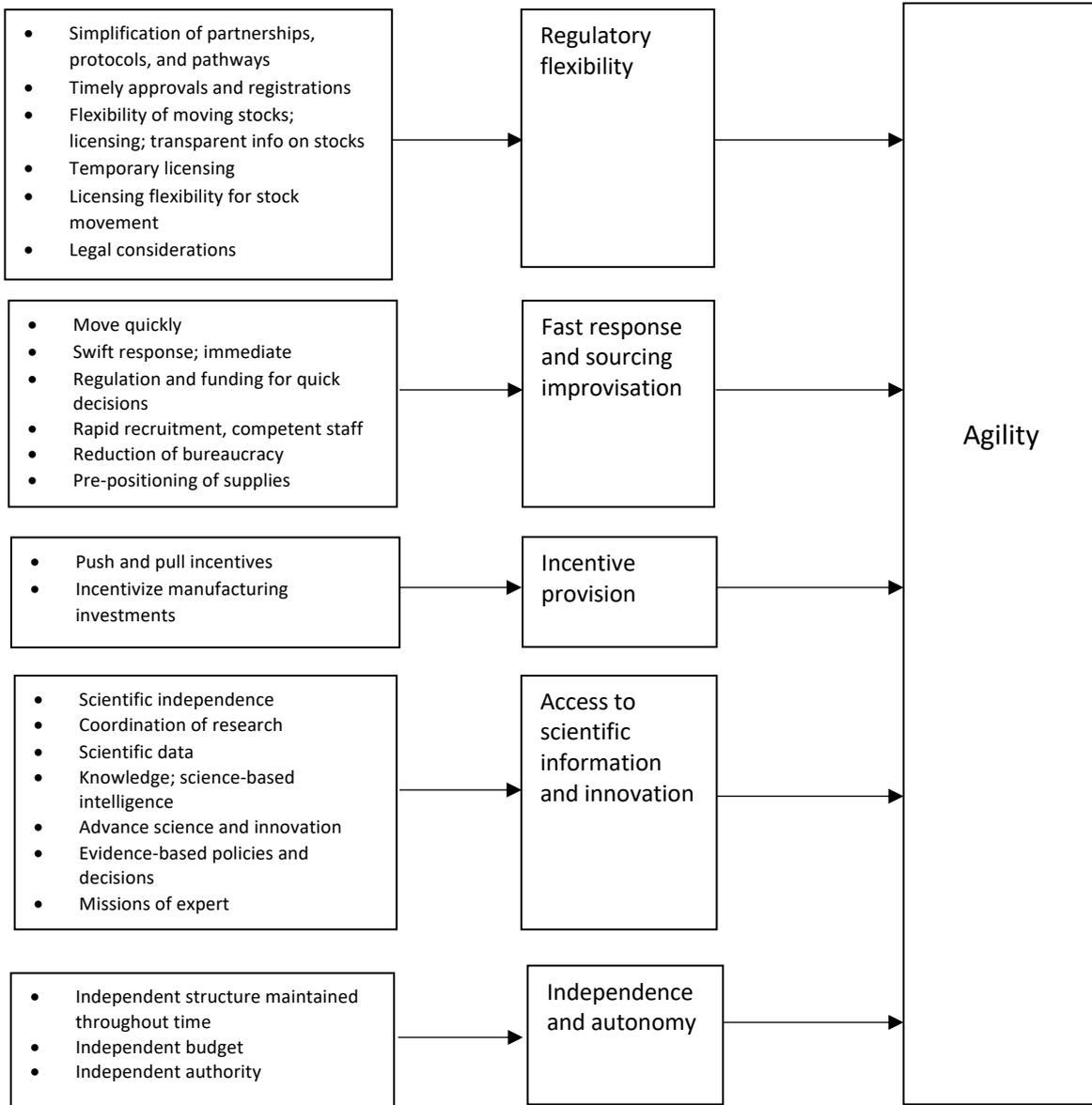
	<p>“It is essential that an independent structure in the form of an agency be set up in order to ensure dedicated resources are maintained over time, as there is a genuine risk that material support for preparedness in the face of public health emergencies will decline over time otherwise.”</p>
<b>Evolvability</b>	
Customizing activities for different time phases	<p>“We would like to propose three key areas of recommendations to build (1) preventive, (2) reactive, and (3) recovery resilience, applied pre, peri and post-crisis.”</p>
	<p>“It is crucial that we enhance pandemic preparedness planning in peacetime at the global, EU and national levels.”</p>
Longstanding and adaptive governance	<p>“Long-term government commitments and planning will also be necessary to keep certain technologies, knowledge, and manufacturing capacities available within the industry, especially for products that are not produced on a regular basis.”</p>
	<p>“Embrace an adaptive governance mindset in times of uncertainty, asymmetric information, and diverse country contexts.”</p>
Growth	<p>“Computer modelling and simulations methodologies can guide the proper design and operations of bioreactors and, hence, reduce the time needed to scale up and replicate the production of new treatments.”</p>
	<p>“HERA should serve as a centralized clearinghouse for information exchange and coordination to support late-stage development, manufacturing, and scale up.”</p>
Vigilant awareness	<p>“It is imperative that HERA maintains sufficient flexibility to address arising and unexpected threats.”</p>
	<p>“Climate change represents a massive direct threat to respiratory health by promoting or aggravating respiratory diseases or, indirectly, by increasing exposure to risk factors for respiratory diseases. It is important that HERA has all these threats fully on its radar.”</p>
Knowledge creation and transfer	<p>“The stated goal of leveraging the power of artificial intelligence and predictive models to anticipate threats will require robust datasets that must include enough pediatric data to make accurate predictions about this population.”</p>
	<p>“The HERA will act as a network for knowledge and training to create the next-generation scientists and practitioners in the field of disaster and pandemic preparedness.”</p>

### Appendix 3: Thematic Coding



**First-Order Concepts/  
Actions**

**Second-Order Themes/ Aggregate Dimensions/  
Resources Schemas**



**First-Order Concepts/  
Actions**

**Second-Order Themes/  
Resources**

**Aggregate Dimensions/  
Schemas**

