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Olivier Borraz, Bengt Jacobsson

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Organizing expertise

France and Sweden in the fight against Covid-19

Olivier Borraz

Sciences Po, Center for the Sociology of Organizations (CSO), CNRS, Paris, France.

Bengt Jacobsson

Södertörn University, Huddinge, Stockholm, Sweden

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Abstract

In the fight against the Covid-19 virus, France and Sweden stood at opposing ends along a continuum: one country went for lockdowns; the other relied more on voluntary measures. Both strategies were shaped by the governing structures in each country: in France complex and fragmented organizational arrangements focusing on health security, in Sweden a single dominant agency maintaining a broad public health perspective. Using concepts from organization theory – loose vs. tight couplings and exploitation vs. exploration – we show how the divergent strategies evolved in both countries. While loosely coupled organizational arrangements were rapidly tightened in Sweden, the system in France went in the opposite direction becoming loosely coupled. While the Swedish case was mainly one of exploitation of existing knowledge and expertise, more uncharted territories were explored in France. While alignment across actors in Sweden took place with one dominant agency in the center, alignment in France was related to actions of neighboring countries and centered around the president of the republic. Evidently, there was more than one way to fight the pandemic, and whichever path was followed ran the risk of producing lock-in effects.

Keywords

Expertise, tight and loose coupling, exploration and exploitation, Covid-19, France, Sweden.

Introduction

Early 2020, a majority of European countries confronted with the rapid spread of the Covid-19 virus opted for strict measures to curb the wave of infections. These measures included: closing schools and all non-essential businesses; requiring that the population stay home; imposing travel restrictions and closing borders; and later, requiring the mandatory use of masks in public settings.

They were adopted by governments, committed to following scientific advice, and had for many of them never been tested on such a large scale. Their purpose was to avoid hospitals being overwhelmed by patients. France exemplifies this strategy.

Several countries opted for a different strategy, notably the UK and the Netherlands, but only one stuck to it throughout the pandemic: Sweden. Here, schools were never closed (with the exception of upper secondary schools and universities). No lockdown was introduced, all activities remained open, borders were never closed, and people were simply advised to work from home, limit travel and movements, and adopt protective gestures. This strategy was promoted by the Public Health Agency (*Folkhälsomyndigheten*, hereafter Fohm), with government officials remaining at arm's length.

These differences were heavily debated, notably in 2020, with Sweden portrayed as an outlier, refusing to adopt measures that most other countries saw as the only means to curb the spread of the infection. Several authors tried to make sense of this strategy (Capano *et al.* 2020, Pierre 2020, Baldwin 2021, Anderberg 2022), considering that what needed to be explained were not the solutions adopted in most countries, since these were inevitable given the nature of the threat, but Sweden's adoption of a distinct path, sometimes presented as excessively lax. Some authors even concluded that Sweden had conducted an "experiment" (Aucante 2022; Bergmann and Lindström eds. 2022), even though their experts followed existing protocols and procedures. We argue that both strategies raise questions.

First, how and why did Sweden pursue a strategy that stood in stark contrast with that adopted in most other countries, including its closest neighbors? And how did it maintain this strategy, even when confronted with mounting pressures from other countries, but also from domestic media and some national experts, to adopt stricter measures during the Spring of 2020? Second, how and why did France, like most other countries, distance itself from the organizational arrangements put in place before the pandemic to prepare for such a critical event, and choose instead to largely improvise its response, creating new organizations and introducing measures that had never been planned and whose results were unknown at the time?

Literature review

Answering these questions requires an in-depth study of organizational processes involved in the definition of these strategies. Few such studies exist for the moment. Instead, scholars have engaged in, often large-scale, comparative studies, to identify explanatory factors for the differences, or similarities, observed. Such factors have proven hard to find¹.

For instance, Christensen *et al.* (2022) focus on the role of expertise and politics to explain variations across Nordic countries. They find that politics played a bigger role in Denmark, Norway and Finland, whereas in Sweden and Iceland experts were more influential. This led, paradoxically according to the authors, the former to adopt stricter measures (contrary to expectation that experts, not concerned with trade-offs, would be more prone to impose such measures): “if politicians steer the process through hierarchical command and control, they tend to use more invasive regulatory instruments to reduce the likelihood of being blamed for excess mortality and to show political leadership in times of crisis.” (Christensen *et al.* 2022: 16) The authors also insist that some of these countries departed from pre-existing arrangements, notably Denmark and Iceland, whereas other followed preparedness planning, notably Sweden. Finally, they note that imitation between Denmark, Finland and Norway played an important role, but their theoretical framework does not allow to explain this and why Sweden chose not to follow its neighbours².

In a much larger-scale study of many countries across the globe, Greer *et al.* (2021) find that regime type (autocratic vs. democratic) does not provide a convincing explanation for variations

¹ Many comparative approaches of the handling of Covid-19 have been published since 2020: between two or more countries (Rice 2020; Baekkeskov *et al.* 2021; Bandelow *et al.* 2021; Kritzinger *et al.* 2021; Boswell *et al.* 2021; Donadelli & Gregory 2022; Yan *et al.* 2020; Kuhlmann *et al.* 2022; Hodges *et al.* 2022); between Nordic countries (Christensen *et al.* 2022); between EU and non-EU countries (Toshkov *et al.* 2022; Engler *et al.* 2021; Egger *et al.* 2021); between regions within a single country (Mattei & Vigevano 2021); and between countries worldwide (Capano *et al.* 2020; Jasanoff *et al.* 2021; Greer *et al.* 2021).

² Further discussions on these variables can be found in: Donadelli & Gregory 2022; Bandelow *et al.* 2021; Hodges *et al.* 2022; Jensen *et al.* 2022.

or similarities. Instead, they find that institutional variables (e.g. presidentialism, federalism) go some way in explaining differences; yet their case studies often provide for exceptions, which limit the explanatory capacity of these factors. They conclude that politics matters, meaning that in each country, a combination of multiple contextual variables explain the paths taken, making it indeed hard to come up with clear, overall explanatory factors³.

In another important study of European countries, Egger *et al.* (2021) test different scenarios (level of pandemic threat; the role of counter-powers; ideology) and find that none of them are supported by the data collected. They conclude that “the level of interpersonal and political trust, the GDP per capita, the democratic experience and, partly, the existence of counterpowers are all associated with restrictive policies. While our results do not allow identifying which of these causes are the most explanatory ones, answers have to be found among these inheritances of the past, be they political culture, institutions or the state of the economy.” (15) This echoes Greer *et al.*'s (2021) conclusion. The authors also consider imitation and find that “close countries characterized by shared political experiences and history—such as the Nordic countries or the Eastern European ones—followed a very close course of action.” (15) – a result contradicted by the previous paper.

The argument of policy diffusion has best been analysed by Sebhatu *et al.* (2020). In a study of OECD countries, they observe that within two weeks after the pandemic was declared, most countries had adopted similar non-pharmaceutical interventions (NPIs), a puzzle that cannot be explained solely by the fact that the threat was the same everywhere, given differences in the spread of the virus. One of their major findings is that strong democracies were slower in adopting strict measures than less democratic regimes, due to counter-powers and hesitancy in imposing strict measures; but once a strong democracy had adopted NPIs, these quickly spread to neighbouring countries. This pattern of diffusion can be explained by the close relations and interdependencies between countries that share borders. But the authors also point to the role

³ On the role of politics, historical precedents and court politics, see also: Yan *et al.* 2020; Capano *et al.* 2020; Rice 2020; Boswell *et al.* 2021. On the role of expertise, emotions and narratives, see Weible *et al.* 2020.

played by the Imperial College models, which did not only describe the wave of infections but also listed the various NPIs that could curb the wave – a factor to which we will come back⁴.

There is much to be learned from this literature, which is continuously growing as we write. However, it has its drawbacks.

First, most of it lacks in-depth studies. The majority of articles lean substantially on secondary sources: media accounts, official reports, limited expert surveys, etc. and only a few rely on interviews with experts and officials. With this has followed a certain repetitiveness, in particular when an influential paper published early on, such as Pierre’s on Sweden (2020), eventually came to be systematically used as a reliable description of the Swedish strategy, although it rested on limited data at the time. Second, as pointed out by Egger *et al.* “all existing studies are of a descriptive scope and give preference to the collecting of a few indicators in a large number of countries over an analysis of the diversity of the policy responses” (Egger *et al.* 2021: 2). Accordingly, much of the reasoning is strikingly decontextualised. And third, most studies start from the observation of differences or similarities between countries and work their way up to identify explanatory variables, instead of analyzing how decisions were made. Yet, there is clearly a need to study the decision-making processes within and between organizations. Indeed, while most studies have focused on expertise, institutional arrangements, politics, and diffusion, we contend that organizations also matter, as places where power relations are played out between actors collecting and analysing data, assessing policy options, and producing recommendations. Understanding the role of organizations, in turn, requires in-depth and contextualized studies⁵.

In this article, we compare the Swedish response with the French handling of the crisis, as they unfold in both countries simultaneously. The choice of the two countries is justified by the fact that they stand at opposing ends along the spectrum of strategies adopted in 2020 within Europe.

⁴ On the “monotony” in officials’ and experts’ discourses, see Baekkeskov *et al.* 2021. Regarding the challenges facing evidence-based decision-making in uncertain situations, see Rubin *et al.* 2021; Vickery *et al.* 2022.

⁵ For other case studies of two countries that provide some elements of context, see Bandelow *et al.* 2021; Baekkeskov *et al.* 2021; Rice 2020; Donadelli and Gregory 2002.

Our main hypothesis is that the differences can be accounted for by focusing on the organization of expertise in the two countries and how this expertise fed into the decision-making process. By organization of expertise, we refer to the ways in which evidence was collected, analyzed, and made available to decision-makers, oftentimes accompanied by policy recommendations. Whereas Sweden relied on a single agency – Fohm – to handle the crisis, France had at its disposal at least three agencies alongside the ministry of Health; to which the president of the Republic added an *ad hoc* scientific council. This suggests that a single vs. multiple organization of expertise leads to very different outcomes: in accessing information and data; in striking trade-offs; in building legitimate recommendations and decisions.

Theoretical framework

To highlight the differences observed, we will make use of two strands of literature.

The first relates to tight vs. loose coupling. According to Weick, loose coupling refers to a situation in which coupled elements are responsive but retain evidence of separateness and identity (1976: 3). Perrow adds that “Loose coupling, then, allows certain parts of the system to express themselves according to their own logic or interests. Tight coupling restricts this.” (1984/1999: 92) Arguments in favor of loose coupling in and between organizations include the fact that such systems can gain better knowledge of their environment, allow for localized adaptation, retain a greater number of mutations and novel solutions, and be more resilient to breakdowns. A “sense of efficacy might be greater in a loosely coupled system with autonomous units than it would be in a tightly coupled system where discretion is limited.” (Weick 1976: 8). Perrow has applied these insights to nuclear production, suggesting that tightly coupled systems, in which all the different components are strongly interdependent, are more vulnerable to even small incidents and less prompt to identify errors and correct them, than loosely coupled systems in which the different components can adapt differently (1984/1999).

There have been multiple uses of these notions over the years. In a discussion paper, Orton and Weick (1990) criticize the static, descriptive approach adopted by many authors, and argue instead in favor of a more dynamic approach: “The concept of loose coupling is simplified when researchers use it for flat, static descriptions, rather than detailed, dynamic descriptions. [...] Researchers who see systems as static objects to be labeled (‘this is a loosely coupled system’)

are less likely to capture loose coupling than are researchers who see systems as an arena for complex, ongoing processes ('loose coupling in this system occurs when. . .'). The dialectical interpretation of loose coupling can be strengthened when researchers look closely at the processes within systems." (218-219) They consider that ethnographies, case studies, systematic observations, and comparisons between a small number of cases are more appropriate for observing these processes than studies involving questionnaires, numerical indicators, and large numbers of cases.

This idea of ongoing processes has been applied to high-reliability organizations (Weick & Roberts 1993), and more recently by Diane Vaughan to air-traffic controllers (2021). This author describes how loosely coupled systems can suddenly tighten their relationships in moments of alert, and how this move from loose to tight coupling rests on "distributed cognition, interpretive work, interaction, and negotiation" (257) In so doing, she not only focuses on the dynamic nature of coupling, but also shows that what is at stake is information sharing and coordination. Entities may be loosely coupled, but in times of crisis, through various cultural and structural factors, come together to make sense of the situation and coordinate their efforts.

France and Sweden offer two contrasted cases on this account. In France, the health sector is formally centralized. The ministry of Health is positioned at the top of a complex set of organizations, including hospitals, multiple expert agencies and regional agencies. The system is organized top-down and expected, in a time of crisis, to tighten coupling between the different actors in order to facilitate coordination and implementation of decisions. Sweden, on the contrary, is formally a loosely coupled system with, on the one hand, highly independent agencies, such as Fohm, working at arms-length from the government and, on the other, autonomous regions in charge of healthcare and municipalities in charge of elderly care. Yet, while the French case underwent a process of loose coupling, fueled by the creation of new organizations weakly coordinated with existing agencies, Sweden went the opposite way, tightening up around the Public Health Agency, with the other organizations taking their cues from this agency and sharing on a constant basis their information.

The second strand of literature relates to March's distinction between exploration and exploitation. "Exploration includes things captured by terms such as search, variation, risk

taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution.” (March 1991: 71) In an extensive review article of the literature on these two notions, Lavie, Stettner and Tushman (2010) suggest that “exploitation is associated with building on the organization’s existing knowledge base. As long as the organization persists within an existing technological trajectory and leverages its existing skills and capabilities, its operations are geared toward exploitation. [...] In turn, exploration entails a shift away from an organization’s current knowledge base and skills.” (114) These authors insist that these two notions should not be opposed: “exploration–exploitation should be viewed as a continuum rather than a choice between discrete options.” (114) Organizations can transition from one to the other over time: exploration is possible when there is an existing knowledge base; when exploration succeeds, it gives way to exploitation. “Hence, there is a natural cycle of exploration– exploitation [...] that blurs the distinction between these two activities.” (115)

Different factors explaining the choice to prioritize exploration over exploitation, or vice-versa, have been explored in the literature. The nature of the environment (and its degree of uncertainty and instability), exogenous shocks, organizational structure, culture, or management have been found to play a role. But the explanation often works both ways. For instance, exogenous shocks can encourage organizations to opt for exploration, in order to identify possibly opportunities for innovation or simply gather as much information as possible to make sense of the situation. But they can also lead organizations to rely on their known, existing strengths and avoid engaging in risky activities at a time when uncertainty prevails. The same holds true for centralized decision-making: it may facilitate exploitation and constrain exploration, but can also work the other way around, if decision-makers distrust their own organizations. Strong cultures should lead organizations to stay within the realm of what is known and established, unless they have identified the risk of groupthink. Finally, if top management has worked together for a long time, they can be expected to favour exploitation; unless an exogenous shock provides them with the opportunity to introduce change in their organization.

With Covid-19, we see different strategies playing out in 2020. France opted for a strategy of exploration, by creating a novel organization in charge of producing expertise, which in turn adopted an epidemiological model that had never been used before in such a situation and

recommended that the government introduce measures that had never been planned for, tested, or studied (notably, a total lockdown of the population). The experts and authorities had no idea whether the measures would work, but believed, based on the model, that this was the best solution. In this case, if we consider the measures as experimental, we can hypothesize that the creation of a novel organization, in a context of radical uncertainty, linked with the availability of a tool (the model), created the conditions for exploration. Had the government relied on existing agencies and administrations, with their plans, routines, and procedures, it is possible that they would have opted for another set of measures, more in line with a strategy of exploitation. Sweden chose a different path: the Public Health Agency decided to exploit existing forms of knowledge and relationships, judging the situation too uncertain to wander into unknown territories. We can hypothesize that this is due to: the fact that an existing organization took the lead in managing the situation; the strong relations among the top management of the agency, sharing a similar culture of public health; and legal constraints, that restricted any form of exploration.

Methods

Primary data for this paper was collected during semi-structured interviews with key experts in the two countries. In Sweden, 16 interviews with experts working at the Public Health Agency (hereafter Fohm) were conducted between December 2021 and June 2022. In France, 35 interviews were conducted with experts and key officials in different ministries, between the Fall of 2020 and Summer of 2022. These interviews were recorded, transcribed, and analyzed.

Sources of secondary data were also available. These include official reports from the Corona Commission in Sweden (three reports between 2020 and 2022) and in France parliamentary reports from the National Assembly and the Senate (late 2020), an audit of the government's response to the first wave (June 2020) and an official enquiry to evaluate the government's response in France (March 2021). These reports often provide a factual account of the crisis along with the authors' analysis, but they also provide a wealth of information, notably auditions and in the case of the Corona Commission, meeting notes, interview protocols, emails and other documents produced during the crisis. Other sources of secondary data used were books and articles published by journalists during the crisis.

Finally, we also relied on media coverage, including the daily press, TV, radio and social media. These were useful to understand both the official communication strategy deployed in the two countries, and the controversies that emerged from by critical experts who published op-eds in large newspapers and used social media to formulate criticism against the official strategy.

The comparative analysis presented in this paper uses the “most similar systems design”. This method applies to countries that share many traits, including in our case the fact that France and Sweden are long-standing democracies, belong to the European Union, and enjoy a high socio-economic status coupled with a strong welfare regime. Both countries have also experienced several major crises in recent years and invested considerable amounts of resources in crisis preparedness (the 2019 Global Health Security index that measures preparedness for epidemics and pandemics ranked Sweden 7 and France 11). According to this design, “(1) the factors that are common to the countries are irrelevant in determining the behavior being explained since different patterns of behavior are observed among systems sharing these factors; (2) any set of variables that differentiates these systems in a manner corresponding to the observed differences of behavior. . . can be considered as explaining these patterns of behavior” (Przeworski and Teune, 1970: 34). Focusing on the organization of expertise as a key difference between France and Sweden allows to corroborate the fact that this may explain the different outcomes observed. It also allows to focus on processes rather than simply static variables.

Managing the crisis in Sweden and France

In this paper, we choose to focus on the period between early 2020 and early 2021, as this is when most key decisions were made in both countries. We will start by describing the institutional and organizational setup in the two countries. Then we will present the responses during the first phase of the pandemic; the choices of epidemiological models to anticipate the evolution of the pandemic; the modes of expertise production; and finally, the characteristics of decision-making. In the next section, we will explain the differences observed.

The institutional and organizational set-up

The Swedish Public Health Agency (Fohm) was founded in 2014 from the merger of three agencies: the Swedish Institute for Infectious Disease Control (*Smittskyddsinstitutet*), the

Communicable Disease Prevention and Control Unit at the National Board of Health and Welfare (*Socialstyrelsen*), and the Public Health Institute (*Statens Folkhälsoinstitut*). It was seen as necessary to have one agency responsible for the entire field of public health, covering a wide range of disciplines. Demands for this organizational reform also came from regions and municipalities who wished for a more coordinated organization that could support them with advice and assistance, in their everyday operations as well as in times of crisis. At this moment in time, finally, to merge agencies was in accordance with the general administrative policy.

The focus of the new agency is public health, in its entirety. This implies that issues such as infection control shall be dealt with using a broader base of knowledge, including behavioural and social sciences. The mission of the agency is to integrate different forms of expertise and to strike the necessary trade-offs and compromises, based on the Communicable Diseases Act (*Smittskyddslagen*) of 2004. This Act requires that infection control measures adhere to science and proven experience. Measures to reduce the spread of the infection shall be balanced against their effects on other aspects of public health. Special consideration shall be given to the interests of children and vulnerable groups. Lastly, the Act places a strong responsibility on the individual: citizens shall be convinced and not coerced to adopt appropriate behaviours.

The commitment to this institutional and organizational framework was strong during the pandemic. In giving the lead to the agency in handling the pandemic and trusting it to make the right compromises, the government followed a path previously laid down. One may argue that the response was a consequence of the Swedish dualistic model, with small government units and large and fairly autonomous agencies, under the reigning principle that agencies responsible for an area of activity in normal times are also responsible for this area during a crisis. Yet, nothing in the administrative model prevented the government from intervening in the way that it did in many other countries. The fact that it chose to adhere to an existing framework was a political decision, based on its close relations with Fohm.

France presents a more complicated institutional and organizational set-up. The health sector, with regards to infectious diseases, comprises three agencies operating under the ministry of Health, and more precisely its general health directorate (*Direction générale de la santé – DGS*): *Santé Publique France* (SPF), in charge of public health, was created in 2016 after the merger of three agencies in charge of surveillance, education, and emergency management; the

Haut Conseil de Santé Publique (HCSP) is a high council producing expert advice on a range of public health issues and whose recommendations are made public; the *Haute Autorité de Santé* (HAS) produces health guidelines and protocols. Only HAS enjoys a real autonomy from the government, the two others coming under the direct supervision of the DGS.

In addition to this fragmentation, another difference lies in the fact that the overarching principle with regards to health issues in France is not public health, but health security. This notion, initially coined in 1998 and introduced in legislation following several major health scandals (Nathanson and Bergeron 2023), signals the importance of protection against health hazards as a key mission of the state, in a country in which public health is structurally weak; in large part because of the dominance of a curative and individual-based approach defended by medical professionals, over the preventive and population approach of public health professionals. Accordingly, under the umbrella notion of health security, the above-mentioned agencies are expected to provide the government with robust scientific expertise to adopt protective measures. This new set-up was put to the test on several occasions (the 2003 heatwave, the 2009 H1N1 pandemic, the 2010 Mediator scandal, a drug used against diabetes with deadly side effects), which led to various reorganizations, including the above-mentioned merger in 2016. These reforms were also designed to strengthen the DGS, notoriously weak and understaffed, by providing additional help from outside organizations. The paradoxical result of this was emptying the DGS of its expertise, with the different agencies jealously defending their autonomy.

A final difference is that, contrary to Sweden, France had no preexisting legal framework for handling a large-scale pandemic. This led to the adoption on March 23 2020 of emergency legislation, regularly prolonged by the National Assembly until July 31 2022, which gave the government special powers, for instance to introduce lockdowns and later require vaccine passes, all measures pertaining to civil liberties.

Managing the early phase

During the first months of 2020, the handling of the pandemic was intensively discussed in the Swedish Government Office. As mentioned above, Fohm took the lead. In the middle of January, it activated a special working group to monitor the upcoming situation. Later the same

month, Fohm requested the government to classify the virus as a notifiable infectious disease according to the Communicable Diseases Act, as both dangerous to public health and dangerous to society. The Swedish government decided in accordance with the request. In the beginning of February – according to plan – a Crisis Management Group was formed inside the agency.

This Group rapidly grew. Working with a separate crisis organization inside the agency however met difficulties. Parallel structures required that people worked both for the Crisis Management Group and their own department. More and more resources were needed: “... *we needed more in-house experts in all the various fields that this pandemic affected in society. We didn't only need microbiologists and epidemiologists to look at it, but rather look at what is happening at schools and in society at all.*” By the end of March, the Crisis Management Group was dissolved. It was seen as dysfunctional: “*We really needed to mobilise ... The easiest way of mobilising was to have the normal organisation.*” After this short-lived endeavour, Fohm managed the pandemic with its existing organization. Some new units were created, experts in different fields were recruited and the workload increased massively, but the work was now handled by the entire organization with its decision-making processes.

The government also had its own crisis organization, but the relations between the ministry of Health and Fohm were intensive and by and large the government followed the agency's recommendations. This posture was criticized as too passive. On March 15, the editor of a prominent Swedish newspaper (*Dagens Nyheter*) argued that it was necessary to close down the country and deemed reckless to delegate decision making to an expert agency.

When the first alert signals of a new virus in China reached the French ministry and its agencies in January 2020, emergency protocols were immediately activated. The ministry of Health regularly upgraded its levels of alert, whilst *Santé Publique France* activated its crisis management unit. But the DGS chose not to activate the 2011 pandemic plan, designed for a major flu outbreak; nor did it activate the CIC (inter-ministerial crisis center), an emergency operation center positioned at the ministry of Interior but operating under the authority of the Prime Minister and designed to coordinate all the ministries in a crisis. When the situation grew more serious, the DGS created on February 18 an improvised inter-ministerial task force, based at the ministry of Health, instead of activating the CIC. As with Fohm in Sweden, the DGS maintained ownership over a possible looming crisis. In both cases, their directors wished to

avoid repeating the mistake of overreacting, as they had done with the H1N1 pandemic in 2009. It is with this in mind that they waited.

February went by without any significant evolutions. It is only late in the month, when Italy was hit, that experts began to worry. In France, this led the president of the Republic, Emmanuel Macron, to convene a first meeting of experts on March 5. While some considered that it was only a matter of time before the situation in France mirrored that of Italy, most of those present that day considered the epidemiological models used by Imperial College in London to be exaggerated (see below). More important, the political agenda at the time provided little room for a health crisis, with a pending pension reform requiring a quick adoption by the National Assembly (Bergeron *et al.* 2020). It is only on March 10 that the president of the Republic created an *ad hoc* organization, the Covid-19 scientific council, and subsequently recognized a pending crisis. The decision to create the scientific council came as a surprise, given the existence of two existing agencies (SPF and the HCSP) that could have handled the crisis. But it is in line with prior crisis situations in France (in particular the 2015 terrorist attacks, during which both the president of the Republic and the minister of Interior created their own expert groups, alongside existing crisis management organizations); along with the weakness of public health in France. As one public health expert stated: *“I realize that in fact the justification for the creation of the scientific council is based on the fact that public health does not exist in France; that’s the way it was argued to obtain the creation of the scientific council.”* The surprise also lied in the composition of the council, with its members, mostly biomedical professionals, chosen *intuitu personae*.

The scientific council convinced the President on March 12 to close the schools. On March 14, it recommended closing restaurants, bars, and all non-essential businesses. And on March 16, it presented a national lockdown as the only solution to prevent a looming wave of contaminations from overwhelming the hospital system.

Models as representations of the crisis

One difference between the two countries – significant for decision making in the first stages of the pandemic – lied in the models used to predict the spread of infection.

Modelling was at the core of the decision-making process at Fohm. Anders Tegnell, the State epidemiologist, worked closely with the head of the unit responsible for modelling. But in the beginning of the outbreak, there was not enough reliable information to work on. As long as knowledge about the unreported fraction of cases was missing, it was seen as impossible to produce any simulation models about the spread of the infection: *“It could go so very wrong. I think that's one of the mistakes many modelers did in the early stages, because they had no idea at all about how large fraction the reported was out of the total infected cases”*.

It was not until the end of March 2020 – with knowledge about the relation between reported and infected cases in a roughly randomized population-based survey – that forecasting became possible in Sweden. This was after a controversy in the middle of March 2020 around the Imperial College model. Based on this model, some researchers predicted that nearly 100 000 Swedes would die in the first half of 2020, if more restrictive measures, such as those introduced in many other countries around Europe, were not introduced. The experts at Fohm, however, believed that too many assumptions relative to individual behaviours had been built into the model while so much still was unknown: *“So, feeding the Imperial Model with all these assumptions you had to make, there is so much uncertainty in it that made us think it was not a realistic scenario”*. Thus, the modellers at the agency chose not to adopt the micro-simulation models used by Imperial College. They relied instead on a more aggregate model with the population divided in homogenous groups: people susceptible, people exposed, people infected and people that had recovered (a SEIR model). This led to the conclusion that the groups most at risk were the elderly and that this should be the focus of crisis management.

In contrast, modelling in France resembled the one produced by Imperial College. This is not surprising given that Simon Cauchemez of Institut Pasteur and a member of the scientific council, had worked at Imperial College. In the initial days of March, however, when a first body of experts was invited by Macron to assess the situation, most of them showed skepticism when confronted with the models produced by Imperial College, arguing that these had often been wrong in the past, exaggerating the dangerousness of epidemics that turned out to be mild. But a week later, when the newly formed Covid-19 scientific council met, many of the same experts had changed position and considered that these models now reflected the reality of the pandemic. This can be explained by the fact that several members of the scientific council worked in Parisian “reference hospitals”, i.e hospitals designated from the start to receive

patients suspected of having been contaminated with Covid-19, given their high level of expertise with infectious diseases. During the weekend of March 7-8, these hospitals were suddenly overwhelmed with very serious cases. But this situation only concerned a limited number of hospitals; all other hospitals in the Paris region and the rest of France, except for the Greater East region, had no or very few cases.

Thus, the combination of a very abstract top-down model with bottom-up data from a limited number of hospitals led the scientific council, and in its wake the government and president of the Republic, to grant credit to the model and from then on to use it as a compass for its action. As a member of the scientific council recalls: *“The figures and the models and the curves of Simon Cauchemez were impressive and he was not wrong when he gave us his curves, we had a hard time believing it because it was so impressive and... the rise of the curve, the exponential, all that, we were... [...] right away, it impacted us a lot. And then, it turned out that when we followed up the theoretical curve with the real curve, there was a perfect parallelism, so we very quickly integrated the curve as a potential virtual reality, since it was nothing less than a mirror or a copy, a copy and paste of what was happening.”* Consequently, the pandemic was framed as a crisis threatening hospitals, calling for nation-wide measures to curb the wave.

These models had consequences in terms of decisions. The model used in France and in many other countries came with a set of policy measures: non-pharmaceutical interventions (NPIs). By comparing the impact of these on the shape of the wave, the models concluded that only strong measures could slow the spread of the virus and preserve hospitals from being overwhelmed. The Swedish model had no similar set of instruments associated with it, apart from recommending that the population reduce its movements and interactions.

School closures are particularly revealing as to the role of models vs. other forms of evidence in decision-making. As one Swedish official said: *“It was a bit of a surprise to many of us, that school closures became such a big thing, and that so few countries actually questioned it ... that was never really a fight in Sweden, I would say”*.

The decision on March 12 to close-down schools in France was based on the model, which demonstrated that this was the only way to slow down the spread of the disease and keep hospitals from being congested. This was only the first of a series of decisions taken on the

same grounds in the next few days and culminating in the lockdown decided on March 16. In each case, due to lack of evidence on the virus and its characteristics, the decisions relied exclusively on the use of the model, largely based on models used for flu epidemics in which children are a source of transmission.

In Sweden, this option was examined but very quickly set aside. First, because their data showed that children were not particularly at risk of falling seriously ill from, or transmitting, the virus. Second, because evidence from scientific studies suggested that children who didn't attend school could suffer terrible long-term consequences. In other words, the decision not to close-down schools was in line with the 2004 Communicable Diseases Act, which required that decisions be evidence-based and that children and special at risk groups be protected. At the time, there was no evidence that school closures would have an impact on infection rates, while there was strong evidence that this would have a negative impact on children. Fohm however accepted the closure of secondary schools and universities: these were young adults who could be more at risk and whose behavior could contribute to the spread of the virus; this was also a compromise with the government who wished to align Sweden with neighboring countries.

The use of a microsimulation model by French experts had one final major consequence: it allowed them to adopt the same metric as most other countries, thus leading to imitation processes based on a single representation of the pandemic and set of measures to curb the wave. Only Sweden followed a different path.

The production of expertise

Beyond the use of different models, the two countries also diverged in the way expertise was produced.

Fohm relied on established procedures within the agency to collect and assess data. Daily meetings between the different heads of departments and experts provided the opportunity to discuss new data, interpret the evidence from different disciplinary and specialist points of view, and discuss trade-offs between policy alternatives; in other words, weighing the evidence according to standard rules of expertise (see Olofsson *et al.* 2022 for an analysis of the cultural production of rules and recommendations inside Fohm). The fact that these meetings took place

physically and, moreover, that many of the experts had worked together for many years, made the discussions easier. In our interviews, experts repeatedly insisted on the importance of those daily meetings on reaching consensual decisions, such as the recommendation not to close schools. They also underpinned the fact that they were all along following existing procedures within the agency that allowed to integrate different forms of knowledge.

Fohm also maintained close ties with scientists and experts, both at home (with the Karolinska Institute) and with partner agencies in the neighboring countries. While these countries followed strategies determined by political authorities (see the literature review), Fohm experts insisted that their counterparts shared the same data and models. And in the middle of March 2020, Fohm formed an advisory group with experts from infection control, epidemiology, virology, and clinical infection medicine (an institutionalization of an already existing informal network) to share information and discuss the different options put on the table by the agency's experts.

Nonetheless, during the entire pandemic, Fohm was criticized for not listening to experts outside of their own circles. In debate articles in *Dagens Nyheter* (starting on April 14), a group of 22 researchers, for instance, criticized the politicians for hiding behind civil servants that "... have so far shown no talent neither to either predict nor limit the development that we now live with" (see also Bergmann & Lindström eds 2023 for a critical review of the expertise at Fohm). The Corona commission, in its final report, also concluded that Fohm had not sufficiently considered the diversity of points of view expressed on the topic of the pandemic. This suggests that the methods used to achieve a form of epistemic integration required at some point drawing boundaries and relying on existing networks of relations, which is consistent with a strategy of exploitation, rather than opening up towards experts with whom they had little relations.

France had no similar process of epistemic integration. The scientific council did not have the capacity to take in multiple forms of knowledge. Dominated by biomedical practitioners and experts, it focused mainly on the virus, its diffusion, and its immediate effects on hospitals. Moreover, apart from the initial meetings on March 11 and 12, the members never met physically to discuss data, options, and recommendations, but only convened initially by audio and later visio-conference. As many of them did not know each other before, this did not allow for interpersonal forms of knowledge to emerge. Moreover, no specific procedures of

deliberation were established. As one member remembers: “*In principle, the president of the working group must apply a particular methodology, make sure that everyone has been able to express themselves, identify the points of agreement, the points of disagreement, etc., and there [in the scientific council], it didn’t happen at all like that.*”

The scientific council also had no organized relations with the other health organizations. A representative of SPF sat on the council as an observer, but jealously maintained the autonomy of the agency. The president of the HCSP joined the scientific council a few days after it was set up but made sure his organization continued to produce advice to the government independently. Indeed, as the three existing organizations (SPF, HCSP, HAS) in the field of public health had been initially excluded from the scientific council, they worked to demonstrate their capacity to produce rapid advice and recommendations to the government or medical professionals, to regain authority. Informal relations between the president of the scientific council and the heads of the different organizations avoided open contradictions. But data or policy options were never discussed between the different organizations simultaneously and the DGS made sure during the whole pandemic never to convene the *Comité national du système d’agences* (National committee for the system of agencies), a formal organization designed to bring together all the agencies and coordinate their efforts. Added to that, the various learned societies in the field of health also produced their own advice. Overall, this led to a large degree of confusion, without any specific instance where tradeoffs between policy alternatives could be formally discussed.

Decision-making

In both countries, decision-making rested formally on the central government and, in the case of Sweden, local authorities with regards to hospitals and retirement homes. In the first weeks of the pandemic, the experts were, in both countries, strongly influential. As noted earlier, Swedish journalists regretted that policymakers had handed over the management of the crisis to experts; but in France, the president of the Republic along with his ministers repeatedly justified their decisions on the grounds that they simply followed the science. It was only in April, in the case of France, that authorities began to justify their decisions with political arguments, stating that their responsibility was to consider multiple dimensions and not only

the science. In Sweden, meanwhile, only in the Fall of 2020 did government officials begin to adopt decisions that did not systematically follow expert advice.

What appear to be similarities, though, hide in fact profound differences.

In Sweden, Fohm had to convince national and local authorities to follow their recommendations. This required meeting with them regularly, to provide evidence for their recommendations, answer numerous questions, and consider the feasibility of the measures.

At the national level, relations between the agency and the ministry of Social Affairs were intense during the pandemic, with daily meetings between the Secretary of State and the Director General. The ministry never tried to develop an expertise of its own. Their ambition was to be competent at asking questions and demand convincing arguments. They listened to others – including those who criticized Fohm – but trusted the agency. The State Secretary thought that Fohm had been open: *“I don't think they have created a bunker mentality. They have been good at collaborating and have good networks nationally and internationally, with frequent contacts.”* The head of Fohm or the State epidemiologist also had regular contacts with the Prime minister and other members of government. These meetings were not only designed to share and discuss the evidence for specific measures, but also to maintain a permanent degree of interaction.

Relations to other state agencies could sometimes be a source of tension. Fohm coordinated a National Pandemic Group (NPG) with representatives from the National Board of Health and Welfare (*Socialstyrelsen*) Civil Contingencies Agency (*MSB*), The Medical Products Agency, the Swedish Work Environment Authority, the regional state organizations (*Länsstyrelserna*) and the Swedish Association of Local Governments and Regions (*SKR*). The NPG had been established in connection with the swine flu outbreak in 2009-2010. The group met six times during 2020 and discussed the epidemiological situation and the existing challenges: the protection of the elderly at people at risk, safety of health-care staff, long-term health effects, vaccine issues, legislation etc. But issues arose regarding access to data, leading to tensions between Fohm and *Socialstyrelsen*, or the leadership in managing the crisis, *MSB* being sidelined in the handling of a situation that normally fell into its remit. In both cases, the government arbitrated in favour of Fohm, reinforcing its leadership.

Regarding local authorities, discussions were also intense. As healthcare in Sweden is a responsibility of the regions, the relation to the regional medical doctors was particularly important since they were the links between the agency and the hospitals. Interactions between Fohm and these doctors had always been strong, but they were intensified during the pandemic. While the agency and the medical doctors normally met weekly, meetings now took place twice a week. And according to one of the leading officials at the agency, apart from these gatherings: *“there is a lot of communication going on all the time”*. The meetings with the regional medical doctors were important for the agency to collect information and to assess how measures to handle the spread of the infection could be implemented. Yet, with 21 regions with varying capacities and preferences, relations were sometimes challenging. This often required distinct conversations with each region and providing assistance to the smaller ones.

Relations were less intense with the municipalities in charge of elderly care. But this later proved a weakness as a disproportionate number of Covid-19 related deaths occurred in retirement homes that had been, for many of them, privatized and moreover employed immigrant workers who themselves had largely been overlooked by experts and authorities. Fohm justified this failure on the grounds that they had provided recommendations, but that they were not responsible for their implementation. The comparison with the regions, though, suggests that this was also the result of much fewer interactions with municipal authorities.

Apart from national and local authorities, Fohm also worked closely with different stakeholders, especially business and civil society organizations. The purpose was to share information but also to discuss how measures could be implemented: *“It's very much the Swedish way of doing it. Before we make the legislation, we would get their input, because we were out in fields we had never been working in before. ‘... Is there a point of asking to close at 10 o' clock? Is there any point of asking them to have 2 meters between tables or groups? What would be the more practical solution?’*. Consultations took place with peak organizations, such as the Swedish Sports Confederation (*Riksidrottsförbundet*), the organization for restaurant, hotels, spas and other businesses (*Visita*), the Swedish Church, organizations in the cultural sector and others.

These discussions were original. The typical way of handling these issues would have been through formal exchanges but *“... we started meeting with them instead. Because we didn't really have time to wait. It became very much more efficient to sit down and talk with them for*

an hour every now and then, rather than sending papers back and forth.” The meetings were frequent. The agency would ask: *“We can do this or this or this, and from our point of view we believe they have about the same impact. What do you think? Which one would be the easiest to do and can do you least harm?”*. And the agency felt that this had been successful: *“They were very happy with that, I’d say... They were especially happy that they could actually make choices ... we had a number of different organisations we worked with, and that worked incredibly well. Many, or I would say all of them were happy, even if we more or less destroyed their businesses”*.

All this suggests that Fohm was exchanging daily with multiple organizations. The purpose of these discussions being, not only to share scientific evidence, but also to work on policy measures and their implementation, to ensure their acceptability and effectiveness. Far from being set apart from government authorities and stakeholders, Fohm interacted frequently with them, in the process establishing trust between the different actors. This, in turn, led to the measures’ strong legitimacy.

France provides a very different picture. Initially, the government followed the recommendations of the scientific council, with the different ministries translating them into regulation under the supervision of the ministry of Health. Neither the scientific council, nor any of the other health agencies for that matter, were concerned with the implementation, let alone the feasibility, of these recommendations. They were focused on limiting the number of contaminations and protecting the hospitals, “whatever the cost” as Emmanuel Macron declared early on. Some members of the scientific council established relations with various representatives of civil society organizations (the different religions, for instance) or with general practitioners. But these relations, in no way formalized, rested on individual initiatives and did not weigh on the recommendations produced by the scientific council.

What appeared initially as a tight coupling of expertise and decision quickly evolved. The president of the Republic had created the scientific council to avoid being dependent upon existing expert agencies; but he quickly realized that he had become strongly dependent upon this *ad hoc* organization and a framing of the crisis centered on hospitals. Accordingly, he began to consult experts with alternative viewpoints to regain autonomy. Meanwhile, the expert agencies, initially sidelined, managed as already mentioned to reorganize themselves and

produce guidelines, protocols, and reports in record time. HCSP published 80 reports and recommendations between the end of February and August 2020, against 48 for the whole of 2019; HAS, by October, had published 71 reports and recommendations, each time in a few weeks when it normally took them between a year and a half and three years to produce the same type of document; SPF created numerous indicators to follow the data. Moreover, the process of decoupling the scientific council from the President and his government opened a competition between the different expert bodies, fueled by the government who sometimes addressed the same questions to them separately. This provided the authorities information from which they could cherry-pick, while basing their decisions on other considerations.

Among these considerations, children's health, fatigue in the ranks of the police after several years of intense activity (terrorist attacks, the Yellow Jerseys, protests movements, and implementing the lockdown), the financial costs of the measures taken, and the economic and social consequences of the lockdown, played an important role. But these considerations were not weighed against each other, or against epidemiological data, in any formalized manner or any clearly designed organization. While tradeoffs and coordination were supposed to take place, initially in the CIC (inter-ministerial crisis center) and later on the Defense and Security Council (a temporary organization designed for wartime situations, under the authority of the president of the Republic), many actors at the national and local level complained of a large degree of confusion as to where and how decisions were taken.

During the entire crisis, for instance, the ministry of Health never formally participated in meetings of the CIC, choosing instead to manage the crisis on its own. "The CIC did not succeed in playing its inter-ministerial coordination role sufficiently. In particular, the choice was made to place the [ministry of Health's] Health crisis centre on the same level as the CIC and not under its coordination. This choice is explained by the health-related nature of the crisis, and by the fact that the primary objective of crisis management on 17 March was to contain the risk of overflowing the hospital system. It did, however, require the Prime Minister's chief of staff to carry out day-to-day leadership functions."⁶ This led to a two-headed administrative handling of the crisis, with the DGS on one side, the ministry of Interior on the other, and difficulties in

⁶ R. Lizurey, *Rapport de la mission relative au contrôle qualité de la gestion de crise sanitaire*, June 2020, p. 8.

sharing epidemiological data. Initially, the DGS benefitted from the tightly coupled relation between the President and the scientific council, its director having played a key role in the creation of the latter. But when Emmanuel Macron distanced himself from the scientific council, the DGS had to find other allies to continue weighing on the President's decisions. It called upon the health agencies to provide data and recommendations, but carefully maintained bilateral relations with them instead of bringing them together. As one head of agency recalls: *“The ministry of Health took full responsibility for the entire organisation and [...] in a somewhat disorganised manner. So one day we were associated, the next day not associated, we caught up, we held on to the branches, but all the stakeholders and especially all the skills were not really mobilised. That is to say that the health surveillance ecosystem, which could have been mobilised around the DGS [...] was only mobilised bilaterally, there was no collective mobilisation.”*

Meanwhile, the CIC undertook to coordinate all the other ministries. Rapidly, though, its organization evolved to the point of comprising a surprisingly high number of units, without any clear definition of their roles. Actors at the national and local level regularly complained that they could not make sense of an organization that did not correspond to the framework set out in crisis management regulation and moreover were never provided a guidebook or a flowchart explaining how the new organization worked. By May 2020, a new and much more simplified organization was set in place (the CIC-Covid). But by then, formal decision-making had moved to the Defense and security council (CSD).

The CSD was convened as early as February 2020 to discuss matters related to the pandemic but became the central locus of decision-making in the second half of 2020, when it met on a weekly basis. The President would define each week the list of attendees, according to the agenda, but some ministers were always present (Health, Interior, Economy and Finance, Education). The council worked behind closed doors, with no written records. Decisions were prepared in advance in the different ministries, under the coordination of the President's chief of staff. The CIC-Covid served as a secretariat for the CSD, preparing the files sent to the participants every evening prior to the weekly meeting, and then transmitting and explaining the decisions to the different ministries. The decision-making process was thus simplified. Decisions were now made on political grounds, considering health data and recommendations provided by the scientific council and the ministry of Health, along with other considerations

as mentioned above. In other words, the decision-making process was decoupled from the production of expertise. This becomes clear when we follow the chain of decisions from April 2020 to April 2021.

In April 2020, Emmanuel Macron decides to reopen the schools on May 11, against the advice of the scientific council and the ministry of Health, but with the support of the minister of Education. Experts had alerted him on the consequences of school closures on children's health, but he was also made aware by the ministers of Interior and Economy and Finance of the consequences of a prolonged lockdown in their respective domains. As the reopening of schools did not lead to any rise in contaminations, this confirmed the President in his choice not to follow the scientific council blindly.

After a lull during the summer, the virus began to spread quickly again in late Summer and early Fall. The government refused to acknowledge the coming of a second wave, although the scientific council and the DGS were insisting on the need to act quickly. It finally decided to introduce a curfew – once again an experiment at such a large scale – quickly followed by a second lockdown, confronted with mounting evidence of another powerful wave. Science had apparently had the upper hand over politics, but only because the scientific council had formed an alliance with medical professionals and the ministry of Health, to convince Emmanuel Macron to act. And also because other countries in Europe were taking strong measures again. He remained steadfast, though, in his refusal to close schools.

The numbers given by the experts, and used by the authorities to justify their decision, turned out to be exaggerated. Both within the scientific council and among some expert bodies, voices were beginning to question the nature and impact of the measures taken, which contradicted basic public health principles and potentially created serious adverse consequences. The contestation grew early 2021 when the scientific council and many medical professionals and their ministry pushed once again for a strong lockdown. Public health professionals managed to postpone such a decision until April. They were helped by the ministries of Interior and Economy and Finance, both opposed to a lockdown, the former because of police fatigue and the fear that a new lockdown would lead to popular unrest, the latter because of the financial costs that would weigh on the nation's budget. When the decision was finally taken, it encouraged people to stay outdoors, following public health experts' advice.

The role of the scientific council thus slowly declined, as did the DGS's. Decisions rested on alliances that continuously changed, leading to frequent and brutal policy changes. These were neither anticipated, nor followed by any effort to assess their impact. In these circumstances, central ministries and their field services had to continuously adapt to these changes. They rapidly acquired a form of autonomy, as they realized that the decisions taken were often difficult, if not impossible, to implement. Indeed, as many regulations were drafted under the supervision of the ministry of Health, they often overlooked the conditions of their implementation, leading the field services of the state and public organizations to improvise. Examples abound, from the reopening of schools to the organization of public transports. The loosely coupled nature of the system provided many actors with capacities to innovate, with little coordination at the national level.

Explaining variations

Sweden exemplifies a process of tight coupling, with Fohm becoming the center piece of the Swedish strategy in March 2020. This results both from the government's delegation of crisis management to the agency, and the decision by the agency to claim control over a public health crisis. The tightening of relations takes place both within Fohm and between the agency and its environment. After an initial period where a dedicated crisis management organization oversees data collection and recommendations inside Fohm, the decision to involve the entire agency in managing the crisis marks an important shift. The heads of department are called to work together on a frequent basis, each bringing in their expertise. They participate in the discussions on decisions to be made. They redistribute internal resources to provide those units most in need of (wo)manpower with the necessary staff. Fohm becomes tightly coupled. But relations are also tightened with outside organizations: government, agencies, regional governments, and peak organizations. These relations allow the agency to test decisions before adopting them, to make sure these decisions can and will be implemented, to share data and analysis, and more generally to build a consensus around the response. They rest on "distributed cognition, interpretive work, interaction, and negotiation" (Vaughan 2021: 257)

In France, meanwhile, the system becomes loosely coupled. Some members of the scientific council manage to cooperate with public health agencies, but overall, these organizations remain in competition for resources from government and not dependent upon each other, save

for the data that SPF collects and provides to modelers in the scientific council (but no one else). Moreover, these organizations work separately from the structures in charge of general crisis management, but also from local governments, NGOs, peak organizations, and professional groups. Information channels within and between these organizations remain complex and difficult to read throughout the crisis. Decisions are taken in multiple settings, with little to no coordination.

Consequently, the Swedish case exemplifies a strategy of exploitation, relying on existing sets of knowledge and expertise to shape decisions, with little effort to engage in exploration, save on novel issues such as testing. Experts at Fohm are quite confident in their models and the data they have, and believe that, although the virus presents many unknowns, they have the expertise to decide what to do. In time, they admit to two major failures: elderly populations in retirement homes, and immigrants. In the former case, they insist that they had identified and communicated on this vulnerable group from the start, but that retirement homes were the responsibility of municipalities. In the latter case, they failed to consider this population because of a lack of data. In the Fall of 2020, the government begins to take measures on its own: these are judged by the head of Fohm as consistent with the initial strategy, although they mark a shift in the management of the crisis. Overall, the strategy of exploitation remains stable over time, with very limited inflexions (on masks and opening hours for stores and restaurants).

France, in contrast, illustrates a strategy of exploration, which goes hand in hand with repeated policy changes. The decision to lockdown the entire country in March 2020 clearly represents a natural experiment, since such a decision had never been planned, tested, or studied. The decision, two months later, to reopen schools marks another form of exploration, as no one knows exactly what its effects will be. The fact that it does not lead to an increase in contaminations convinces Emmanuel Macron and his minister of Education that their strategy worked, and thus that schools must never be closed again. In the Fall of 2020, the decision to introduce a nationwide curfew is, once again, an experiment, later followed by a second lockdown, but this time with schools remaining open. Early 2021, under pressure to lockdown once again, the president of the Republic first resists, then decides on yet another type of lockdown, encouraging people to spend as much as possible outside their homes! What is remarkable in these different decisions, is both the fact that they are adopted without any justification or clearly stated objective, and that they are never evaluated scientifically. Rather,

they are taken behind closed doors, initially based on recommendations from the scientific council, but very quickly on other sources of information that are never presented. Meanwhile, the scientific council does not assess its own recommendations. Some health agencies work on the consequences of the decisions (for instance, on the mental health of students), but never in a systematic manner. All in all, the strategy of exploration is not equipped with the means to draw lessons from the decisions taken.

Paradoxically, while in normal times Sweden is decentralized and France centralized, the mode of governance during the crisis was reversed. The process of tight coupling in Sweden, if it did not reduce the autonomy of the regions, convinced them by and large to follow Fohm's recommendations and adopt a logic of exploitation. In France, the process of loose coupling provided many organizations, both at the central and local levels, unexpected autonomy to explore new solutions to novel problems.

How can we make sense of these differences? As suggested in the introduction, both the fact that the Swedish system becomes tightly coupled and that it follows a strategy of exploitation, allows for an alignment of interests across actors and organizations. The legitimacy of the strategy derives from the fact that, at different stages of the response, multiple actors are involved, either providing data, discussing options, raising issues, or asking questions. It also results from applying legal principles and rules clearly set out for such a situation. Coupled with daily press conferences, during which Fohm officials provide data and answer questions for several hours, the result is a powerful narrative, shared by a wide range of stakeholders, who have all had the opportunity to voice their concerns and partake in the decisions. The downside of such a strategy of alignment is that it does not allow changing course, as this would be too costly and risk upsetting certain interest groups. Had information suggested that the response adopted was not effective, it is not clear how it would have been made available to the experts and decision-makers and led to a change in policy. Indeed, this strategy resembles a lock-in, with a strong groupthink effect in terms of consensus formation and legitimation.

The French response also shows a form of alignment, but this time with neighboring countries. Throughout the period of the crisis, the French strategy is portrayed as consistent with decisions taken in other countries, except for schools. The initial lockdown in March 2020 is aligned with decisions taken in many other countries the same week (although the content of these

lockdowns varies widely across countries, with France taking a more radical approach). The curfew and second lockdown in the Fall of 2020 are justified on the grounds that other countries are doing the same. The third lockdown decision also mirrors similar moves across Europe. In aligning itself with other countries, France thus demonstrates the existence of only one response. This is made possible using a similar microsimulation model that suggests that only strong NPIs can contain the spread of the virus. This strategy allows to make frequent changes, while continuing to maintain a response consistent with that of other European countries. Meanwhile, the weak central coordination and loose coupling provide many organizations with unheard of levels of autonomy in exploring solutions to novel problems. Evidence suggests that this played a major role in many organizations' capacity, not only to improvise, but also to avoid a collapse.

Conclusion

Up to this point, we have not compared mortality rates between the two countries. As noted by Greer *et al.* (2021), comparing mortality rates is very difficult, since methods used by national administrations to attribute the cause of death vary substantially. These authors suggest that the only way to overcome this difficulty is to rely on excess mortality rates, since these data are not dependent on modes of calculation and attribution. "The best data for political scientists are probably excess mortality. This is a statistic that simply calculates the number of deaths in a given period and compares them to the number of deaths on average in that same period in a given year." (Greer *et al.* 2021: 6-7).

In an article published by *The Lancet* in 2022, the excess mortality rate for 2020-21 compared to the eleven previous years reaches 124.2/100 000 in France, compared to 91.2 in Sweden. Although the latter seems to have fared better, the two countries in fact achieved very similar results if we compare them with countries that did poorly (Italy at 227.4, Spain 186.7, Belgium 146.6), those in the same range (UK 126.8, Germany 120.5, Denmark 94.1 and Finland 80.8), and those that fared substantially better (Norway 7.2) (Wang *et al.* 2022). Even though France and Sweden adopted very different strategies, in the end they arrived at broadly similar levels of excess mortality.

This raises many questions. In particular, how far can these numbers be causally related to policy measures? Did the different strategies have an impact on mortality rates and, if so, in what proportion? We do not believe they had no impact. But authors that argue they had a direct influence should be more cautious (Christensen & Laegreid 2022). For not only do numbers vary substantially between countries that adopted similar strategies, but strong variations can also be observed between regions within a single country. Clearly, many other variables (age structure, urbanization, mobilities, interconnectedness, immigrant population, etc.) are at play (Rosenthal 2021) alongside political decisions.

Thus, our paper leads us to conclude that there was more than one strategy available. This conclusion goes against dominant discourses in 2020, among academics, experts, and political officials alike, that insisted that there was only one way to fight the pandemic, based on the Imperial College model, and that any alternative was doomed to fail (and its proponents later made to answer for their tragic error). Comparing Sweden and France suggests that alternative courses were possible, although they may not have been possible in the same country. Countries should be able to choose their own course of action without being castigated as wrongdoers. The fact that Sweden was for a time heavily criticized for not following the strategy adopted in other countries leads us to hypothesize that experts and authorities in the latter were not comfortable with one country following an alternative path, at a time when they were trying to convince their own populations that there was no other way than to introduce strict measures. Moreover, the fact that they portrayed their strategy as scientific, as opposed to irrational decisions in Sweden, underpins the limits of this type of argument, since Swedish experts were following much more the evidence than their foreign counterparts in the Spring of 2020.

Our paper also demonstrates that, when associated with a strategy of exploitation, tight coupling presents a risk of lock-in. The Swedish strategy was consistent with existing plans and procedures, political principles, and institutional arrangements. Decisions were perceived nationwide as legitimate, thus allowing to resist pressure from outside (and some national experts) for Sweden to align itself with other countries. But it tragically missed the cases of elderly care homes and immigrant populations. The management of the crisis allowed for some adaptation, for instance *vis-à-vis* students and elderly persons (Olofsson *et al.* 2022). But had the general strategy proven to be wrong, there is no evidence that a change of course could have been adopted in due time; since the cost of reversing decisions was too high from an

organizational point of view, given the tightly knit nature of the coalition around Fohm. Thus, exploitation allowed for some exploration, but within clear limits.

At the opposite end, a strategy of exploration associated with loose coupling led to continuous changes, with little in the way of lesson-learning. The French approach provided room for adaptation, exploration, and policy changes, but authorities rarely provided any evidence to justify these, save references to other European countries following the same path. SPF, along with the scientific council, produced multiple indicators from which the government could cherry-pick what best suited its strategy at any point in time. But they systematically avoided assessing the decisions taken. Meanwhile, the President and his ministers maintained a loosely coupled system of decision-making in which they could preserve the autonomy of politics from science; and their own roles in steering the crisis. This allowed for strategies of exploration within many organizations, both central and local, which in turn made adaptation possible. But there again, little effort was made in terms of drawing lessons for future crisis.

We can conclude that the role of expertise varied greatly, not only in terms of how it was organized, but also as to what it covered. Clearly, in Sweden, expertise went beyond the production and analysis of data, to encompass a wide range of tasks related with producing recommendations. In France, expertise was divided in multiple organizations and more limited in its reach, with politicians drawing limits as early as April 2020 to avoid having their decisions dictated by science. More importantly, though, is how and where tradeoffs were made: whereas in Sweden, policy alternatives and their consequences were discussed within Fohm and its network of partners, no such place existed in France, where behind the appearance of highly centralized and personalized decision-making, fragmentation dominated.

Finally, France exemplifies a strategy of distancing itself with the institutional arrangements it had established for many years in preparation for a crisis. As noted in the literary review, many countries did the same. Sweden, in this respect, stands out, with a few other countries across the world, as it stuck to its preparation. Our paper suggests that there may be limits in crisis preparedness, when it is perceived as excessively constraining at a time when political authorities wish to maintain their autonomy. Especially when the crisis is global and requires that countries coordinate their efforts.

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