COVID-19 in France: A Multiphase and Multidimensional Approach to a Complex Societal Imbalance

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This chapter focuses on the effects of the pandemic in France. The first part describes the phased evolution of the perception and treatment of the virus in the first half of 2020. In the second part, a multidimensional analysis describes the societal impact of the health crisis and its negative and positive effects on France in general and, by analogy, in Europe and the world. The study first presents the temporal characteristics of the pandemic associated with the mix of scales, phase shifts, delays, inertia and the random and unpredictable dynamic nature of the crisis evolution. Secondly, a view qualified as functional, depicts the virus in relation to the different roles it played in terms of its capacity to reveal phenomena, accelerate dynamics, divide or reconcile communities together, bring about new behaviours, eliminate or restore weakened entities and generate a questioning of the very meaning of the existence of our societies' lifestyles.

31.1 Introduction

This chapter looks back on four months of exploration of this new world and the experimentation of life in the presence of a deadly virus. A first part deals with the factual nature of the events observed during the first six months of the crisis. An analytical and instantaneous vision of the situation in France is proposed in a second part. Two angles are considered, respectively approaching the temporal and functional views to describe the dynamic parameters characterising the evolution of the crisis and the role played by the virus in the envisaged societal upheavals¹.

31.2 Observation

31.2.1 Evolution of the Crisis, Health Measures, and Risk Perception

The Covid19 pandemic in France followed a phased process. Each of the process stages is to be brought closer to the level of risk perceived or proven by the population and its governing bodies (Figure 31.1)².

¹Due to the uncertainties about the evolution of the crisis and the countermeasures imagined to contain its consequences, the sustainability of the ideas developed and the forecast data is not consolidated. Perhaps the future will deny or correct some of the forward-looking ideas or solutions reported here.

²This graph is only a snapshot of the evolution recorded during the first half of the crisis. At the time this chapter was written, the evolution of the pandemic was on a downward slope. However, many experts believe that a second wave should hit France at the end of the summer.

FIGURE 31.1
Graph of the Evolution of the Number of Cases and Deaths in France in the First Half of 2020

31.2.1.1 Phase 1: Observation and Denial - November 2019-February 2020

Even with the announcement by China of the discovery of a new Coronavirus by the Chinese authorities on January 1, 2020, France observes but is not worried [1]. Reinforced by the finally not very alarmist announcements of the World Health Organization, a feeling of indifference reigns, associated with a (false obviously) perception of invulnerability and a denial of the risks of contamination.

31.2.1.2 Phase 2: Awareness and Projection - Early March 2020

Even though the French generally trust their local health services, there is growing concern among the population. Debates are flourishing at all levels of decision-making, on masks usefulness as a protective barrier, on hydroxy-chloroquine effectiveness as a curative treatment, on the choice between distancing strategy and herd immunity [2]. On March 16 2020, the President announces “France is at war”. The general confinement of the population is introduced.

31.2.1.3 Phase 3: Adaptation and Resignation. Mid-March to Mid-April

Except for a few derogatory measures, 67 million French people have to limit their movements to what is strictly necessary. The French are taking the full measure of the seriousness of the epidemic situation: 70% of those questioned consider that COVID-19 is particularly contagious [3]. In a volatile public opinion, the Covid-19 epidemic sharpens fear, rehabilitates the performative function of the presidential speech and unites the French around the measures taken by the executive branch.

31.2.1.4 Phase 4: Fatigue and Hope. Mid-April to Mid-May

The first month of confinement is well accepted, and the French (no doubt for fear of sanctions) adhere to the measures taken by the government. But, in France more than elsewhere, the credit given to leaders never lasts very long and, one month later, mistrust takes over with a 58% rate of dissatisfaction. Faced with this prolonged crisis and the executive’s procrastination on several subjects (tests, masks, etc.), the confidence of the French people has not collapsed, but it has significantly eroded. Besides, in one month, the number of deaths rose from 150 to nearly 18,000 (Figure 31.2), which understandably cannot drive euphoria. The peak of contamination is reached between 6 and 10 April, and the epidemic begins to recede. The anticipated announcements of deconfinement and a date for its entry into force give new hope. The measures taken by the

FIGURE 31.2

Spatial and Temporal Evolution of Mortality Linked to COVID 19 in France

executive to support short-time working and the social protection nets set up to help individuals and legal entities cushion (temporarily?) the effects of the health crisis, doubled in an economic depression.

31.2.1.5 Phase 5: Liberation and Concern Mid-May End June 2020

On May 7 2020, the end containment measures are officially announced for gradual implementation from May 11. The government policy is based on a three-pronged strategy: (i) living with the virus, (ii) acting progressively, (iii) adjusting locally. Indicators are established for the implementation of the various measures (reopening of schools, shops, public transport, residences for the elderly, places of worship, parks and gardens, beaches, cultural sites, etc.).

FIGURE 31.3

Spatial visualisation of the virus incidence rate indicator on May 7, 2020

These indicators indicate whether a department is classified as green, orange or red zone (Figure 31.3). They are based on the incidence rate of new cases accumulated daily over seven days, the virus reproduction factor, the occupancy rate of resuscitation beds by patients with COVID-19, the positivity rate of tests collected three days previously, and the number of tests performed. The deconfinement phase is a relief for a majority of French people. It is also a source of concern. Health

authorities are worried, however, about the slackening observed at the end of the containment period and the feeling of a few that the war is won. Warnings are constantly being repeated to remind people that the virus is still circulating and that barrier gestures remain essential.

31.2.1.6 Phase 6: Learning and Release July 2020

Even if this number remains relatively constant, one still observes, in a somewhat irrational way, a downward trend in the systematic adoption of preventive measures. This decline in vigilance is undoubtedly linked to deconfinement which favours social interactions and makes it more challenging to adopt physical distancing measures. It is also related to the decrease in the number of hospitalisations and deaths, which may question the usefulness or relevance of maintaining the systematic adoption of these behaviours. (Figure 31.4). It should also be noted that among preventive measures, the wearing of masks is gradually becoming part of everyday life.

FIGURE 31.4
(a) Social Distancing and Barrier Gestures Application (b) Perception of Risk and Preventive Measures

31.2.2 Synthesis

The study of this phased process and the observed behaviour of the French population highlights the definition of risk, based on the exposure between a potentially vulnerable entity and a potentially dangerous event. The perception of risk requires being able to evaluate these different components (levels of vulnerability, danger and exposure), to aggregate them into a single measure and then to compare its value to a reference system capable of providing information on its level of criticality. The exercise is not simple, and very often, the perceived risk is not related to the real threat [4, 5].

Unable to refer to scientifically validated figures or statistics representative of their specific environment or lifestyle, the French have constructed their own indicators based on their interpretation of the signals received, mainly relayed by the media. Still, the distinction in risk assessment according to age groups combined with morbidity factors shows that the severity index is really taken into account in the perception of danger. On another level, the possible distortion between perceived risk and real threat can also be induced by a multiple relaxation risk. The probability of catching the virus is not equal to the likelihood of dying from it. Many people are

asymptomatic and do not suffer the pangs of the disease they carry within them. If it does occur, it is usually mild and flu-like. If, however, a worsening is observed and hospitalisation is necessary, only a small proportion of patients will be transferred to intensive care. Here again, the chance of survival is high. In the end, the risk of death can be minimised by the various emergency exits along the path of the infected person.

31.3 Multidimensional Analysis

The analysis proposed in this paragraph, which is inevitably incomplete, focuses on a few particularities related to different dimensions, in particular those connected with the temporal, functional and sectoral views of the health crisis induced by the appearance of the virus.

31.3.1 Temporal View

Beyond the different chronological phases discussed in the observation paragraph, one of the major difficulties in the management of this health crisis can be explained by temporal factors [6]. Several phenomena appear to coexist in this respect. We detail them below.

31.3.1.1 Time Scale Mixtures

Two crises overlap: a health crisis with immediate effects and lethal consequences and an economic crisis with delayed impact and societal repercussions. The short-term solution aimed at annihilating the virus by confining the people, vectors of its spread, has proved its effectiveness in health terms but leads to economic and social disaster on a more distant horizon. Conversely, refusing to give in to the pandemic comes down to sacrificing thousands of people on the altar of growth and prosperity without any real control of the human cost generated. Both paths seem to be dead ends, and only a subtle compromise should make it possible to limit the damage. At the political level, there is also confusion. The short-term view aimed at keeping endangered businesses alive by rapidly releasing financial aid leads to indebtedness with perhaps postponed devastating consequences in economic terms. The political and the economic horizons differ, as do the time frames at the individual or collective scales.

31.3.1.2 Dephasing

Delayed effects are also very significant in the Coronavirus crisis. First of all, there is a natural delay between infection and symptom appearance or between the different stages of the pathology's evolution. Acting on this dephasing seems to be futile. However, some delays can be reduced due to the slow or delayed effects of political or medical strategies. These delays are due to a lack of knowledge of the pathogenic agents or the evolution of the disease. This is the case, for example, in the search for curative treatments (anti-viral drugs, steroid anti-inflammatory medications, triple therapy, etc.), the results of which are still pending because of incompressible development times but also because of regulatory complications associated with normative issues. Sources of delay may also be linked to a lack of logistical support.

In France, several controversies emerged concerning this issue. First of all, the obligation to wear a mask was declared ineffective by hazardous state communication. The delay in the application of this barrier gesture was, in fact, linked to a lack of masks and an inability to produce them on French soil at the required rate. The same observation could be made about the diagnosis procedure. Implementing virological or serological tests was delayed by the lack of available structures and material shortages. Another controversy was widely talked about, related to the delay (or even absence) of attention by care structures for older adults affected by the coronavirus in retirement homes due to a lack of hospital beds.

31.3.1.3 Space-Time Shift

The erratic spread of the virus highlights a two-speed process.

The circulation of the virus between continents or between countries was not immediate; at the level of the large blocks of contamination, South East Asia was first impacted. Europe was then affected with a delay of about two months. One month later, the United States was hit hard. A few weeks after, South America, Russia and India were in turn, overwhelmed.

When a region is affected, however, the spread can be very rapid, with cases of contamination that can increase at a rate corresponding to an $R_0=4$ (one person contaminates four others on average) and a number of daily cases increasing exponentially. In France, this discrepancy has been observed between regions. The Great East was first affected, then the Ile de France, the Hauts de France and Burgundy. The rest of the regions were spared overall. However, the paralysing effects of the pandemic affected all of France. The same measures were applied throughout the country. This spatial and temporal gap amplified the immediate effects of the crisis and contributed to the blocking of economies by desynchronisation of supply and demand in the framework of interregional or international industrial relations.

31.3.1.4 Inertia

The temporal view also concerns the economy [7]. While the cessation of a commercial or industrial activity may be rapid, recovery can sometimes be more complicated as it cannot be achieved alone and relies on the one hand on synchronisation with the upstream and downstream logistics chain and, of course, on the return of consumption and customers. The recovery, just like the start-up of a business, is likely to come up against the so-called “Bullwhip” phenomenon. This phenomenon, which is well known in production management, is generally initiated by the uncertainties inherent in the demand of each stakeholder in an unstable market. It leads to distortions between current needs and effectively committed production. In addition to the unnecessary increase (or reduction) in production and the associated additional logistics costs, it results in undesirable inertia related to the number of links in the supply chain and their reactivity in processing information (order taking) and in the production (delivery of goods or provision of services).

This inertia is all the more critical in a health crisis that the state of the partners involved in a supply chain is subject to a high uncertainty level (on the partner responsiveness but also the expected product quantity, itself depending on the pandemic evolution).

The launch in France of the manufacture of respirators is the most typical example of this. Companies that were not in the business (notably industrial groups in the automotive sector: PSA, Valeo and Schneider Electric), commissioned to speed up the marketing of this medical equipment have been confronted with this phenomenon. The inertia induced by the start-up of this new activity combined with a lack of awareness of the need for respiratory assistance devices led, on the one hand, to significant delays in delivery and, on the other hand, to overproduction. The newly manufactured respirators were not needed anymore. The essential nature of the demand and the emergency logistics put in place to meet it eventually led to costly and prohibitive expenses without any return on investment or profitability.

31.3.1.5 Chaotic Dynamics

Even if day by day research is making progress and the state of knowledge is improving, the transmission factors and conditions necessary for the transmission of the virus remain poorly understood. Some variables seem to be preponderant (age, morbidity factors, etc.). Others require confirmation (gender, antibody generation, pollution, climate, etc.). It is difficult to explain, for the time being, the low level of contamination in Africa compared to South America, for example. The seasonality of the virus is not certain either. Has a periodic phenomenon been initiated requiring, like the flu, an annual vaccine? Is it, on the contrary, a “one-shot” cellular disorder caused by a natural or human-made accident? Virus mutation, improved detection techniques or advances in treatment are also likely to change the curves. The uncertain nature of all these factors makes it impossible to rationalise the dynamics of evolution and renders challenging to forecast the number of people infected and the projection in terms of expected mortality [8].

In France, the dynamics observed showed a radical effect of containment and barrier gestures in the spread reduction of the virus. Knowledge of the time constants: incubation (1 to 14 days), contagiousness (8 to 37 days) turned out to be accurate and in line with prognosis. What will happen when life returns to normal? What trajectory will the pandemic follow? At the time of writing, all is conjecture.

31.3.2 Functional View

This paragraph discusses the contributory role attributed to the coronavirus. For the most part, the effects of the pandemic are obviously deleterious and have resulted or will result in human and social (excess mortality, depression, domestic violence, school dropout), economic (corporate bankruptcies, debt) tragedies. Nevertheless, as a famous French expression says, “à quelque chose, malheur est bon” which means that however unpleasant an experience can be, you will probably learn from it. The appearance of the coronavirus does not deny the precept. Faced issues, new situations, lived experiences can be sources of inspiration and renewal. In this sense, and without erasing or compensating for the harmful effects of the pandemic, the health crisis can have a role to play and a beneficial character. These aspects are briefly described below. A synthesis in the form of a table is available (<https://tinyurl.com/covidappendix>); this presents a more comprehensive view of the contributory character of COVID 19 on nine major themes: Health Medicine / Economy Business Work / Ecology Sustainable development / Tourism Leisure Sports Culture / Education - Schools - Universities / Society - Lifestyles / Politics State / Justice / Science Technologies.

31.3.2.1 Detector, Scanner and Demonstrator Function

The appearance of the virus has had a significant role in confirming or highlighting the qualities and defects that were until then inconspicuous, or even invisible, of all our systems (immune protection, health management, etc.), organisations (political, industrial, etc.) or strategies (economic, environmental, social) [9]. In France, like a scanner, it has revealed unsuspected weaknesses or, on the contrary, hitherto unknown forms of resilience. It should be noted that the revelation of negative aspects is in itself something positive in that it allows us to ask ourselves questions in order to remedy them and thus offers indirect benefits.

We list below some of the main lessons revealed by the crisis in France:

- **Vital Importance of Public Service and Role of the State.** The vital and unconditional support of the state has marked a disassociation from purely liberal doctrines. Based on market self-regulation and individual self-management, these policies are proving unsuitable for identifying and implementing solutions based on collective and social utilities.
- **Highlighting a Need for National or, at the Very Least, European Sovereignty.** The lack of medicines, health equipment or the shutdown in logistics chains due to the outsourcing of markets has revealed in a patent manner the need to sustain on its soil the means and knowledge necessary to maintain industrial autonomy.
- **Central State Limitations and Administrative Burdens.** The uniformity of containment policies, the slowness observed in the implementation of directives descending from Paris to the regions have shown a need for decentralisation of decision-making, a policy more based on territorialisation and administrative simplification.
- **Impact of Pollution on Health and the Need for a More Environment-Oriented Policy.** While coronavirus has already claimed more than 30,000 victims, fine particles and nitrogen oxides are responsible for approximately 67,000 deaths (lung cancer, stroke, heart attack, ...) every year. The recovery plans devised for a new future must integrate this ecological dimension.
- **Preponderant Role of Feminised Professions in Crisis Management.** Carers, nurses, cashiers,... these often feminised and poorly paid jobs, found themselves in the front line and of vital importance. A pay rise for these professions and a rebalancing of skills within social categories are necessary.

31.3.2.2 Enabler, Trigger, Facilitator, Catalyst, Promoter, Accelerator Function

The pandemic facilitated the outbreak of many phenomena that could not have been observed or would not have developed so rapidly without the presence of the virus, its consequences and the solutions put in place to counter it [10–13]. This role as a catalyst has had consequences, often positive and sometimes negative, by creating the conditions necessary to promote new practices, encouraging the development of new activities and stimulating novel ideas or theories.

A non-exhaustive list of this almost chemical function assigned to the virus in France is provided below.

- **Accelerating the Development of Alternative Energy Vehicles.** The crisis seems to have precipitated environmental awareness and encouraged energy transition. In the automotive sector, manufacturers are favouring the hypothesis that the crisis could accelerate the spread of electric or hybrid models.
- **Enhancement of Scientific Output.** Coronavirus-related research has been boosted: publications, clinical trials, and modelling have increased to unprecedented proportions. However, biases have appeared in the development and results validation, as well as in the monitoring capacity required for the professional to process this surplus of knowledge.
- **Increase in Governance Mistrust and Crisis Communication.** The discredit of the institutional voice (politicians, scientists, media) accelerated during the crisis. Polemics about the effectiveness of treatments and barrier gestures fuelled suspicions of manipulation and lies.
- **Simplification of Labour Law.** MPs adopted the bill on various legislative measures related to the health crisis, which relaxes the rules governing relations between employers and employees. These changes, justified by the need to allow companies to adapt to the consequences of the recession, have however been criticised by the opposition.
- **Amplification of Conspiracy Theories.** “Citizen-investigators”, extremist militants or populist leaders refer to scientific studies, often contradictory, in support of their sometimes collusion suspicions. These plot ideologues aim to criticise authority figures and use them to discredit theories hostile to their models which often remain unclear.

31.3.2.3 Unifier or Divider Function

COVID 19 has also contributed to bringing together or federating, previously distinct domains, based on the observation of common interests, behavioural similarities or structural affinities [14]. It has also favoured the reconciliation, sincere or opportunistic, of historically divided entities but reunited again around shared problems. Conversely, the pandemic has led to separations or divisions by highlighting imbalances in treatment, differences of opinion and distinct perceptions of the situations to be managed [15].

This role of matchmaker or splitter is illustrated in the following examples.

- **Convergence Between Pandemic and Climate Change.** The decline in activity induced by the crisis led a Stanford researcher to state that “reducing pollution in China probably saved twenty times more lives than those lost to the virus”. Perhaps the demonstration that economic deceleration or decline would be strategies for the future.
- **Divergence Between Health Protection and Individual Freedom.** French experts have diverged on the technical solutions proposed to facilitate the identification of “contact cases” of the virus. The reliability of the technologies and their health effectiveness, but above all, the risk of state surveillance or ethical questions have deeply divided the scientific community.

- **Coordination Between Science and Society.** The crisis showed that involving in the decision-making, those who will experience its application leads to more appropriate and better-lived choices. Crossing social and scientific issues requires a body to coordinate public debate, decompartmentalise disciplines and bring together experts and politicians to guide the governmental action.
- **Ecological and Social Opposition.** COVID 19 has shown the impossibility of achieving carbon neutrality without creating mass unemployment. In order not to dissociate the pillars of sustainable development, the ecological transition must, therefore, reconcile environmental constraints, strategic independence, localism and decarbonised and rural reindustrialisation.
- **Reconciliation of Retired Population and Working People.** The lack of resources dedicated to the elderly must lead to a redefinition of the policy on old age. This sector appears as a source of employment and an opportunity for researchers and companies to create innovative solutions. Retired and working people come together in a win-win logic.

31.3.2.4 Singular Point or Emergence Function

The Coronavirus crisis has imposed or will impose a brutal change on our (old?) world and the observed pandemic will undoubtedly be considered in history as a singular point at which lifestyles, behaviours and political strategies will be at odds with past attitudes. Nevertheless, the “France of the future” will not be achieved in a snap of the fingers. Consciences have evolved, which no doubt was the sine qua non condition for the revolution to get underway. Many obstacles to change remain, mostly related to the financial capacity to make the necessary structural changes but also to the possible release of emotional factors once the crisis is over. The health and economic damage caused by the virus seems to have triggered the emergence of irreversible trends [16].

Some illustrations proposed below come to illustrate this singular character.

- **Digital Revolution.** Digitalisation has shown the extent of its capabilities in the treatment of the coronavirus crisis. E-work, e-education, e-commerce, e-services are all areas of activity whose usefulness has been revealed by confinement. A digital upheaval has begun in France. It goes beyond the framework of the State and will be amplified in the future.
- **Break in Hospital Policy.** The neo-liberal trend observed recently in the hospital has undoubtedly had its days. The ethical rule of appropriate care for the patient at the least cost to the community must prevail over the commercial rule of seeking profitability based on the optimisation of its value chains and billing maximisation.
- **Urban Exodus.** The Covid-19 pandemic has highlighted the fragilities of contemporary urban globalisation. By paralysing global operations and freezing metropolises under confinement, the present epidemic has triggered a movement of depopulation of large cities (Paris, Toulouse Bordeaux, Lille, ...), to the benefit of medium-sized towns and rural areas.
- **Changing Traditions.** Sanitary crisis obliges, the kiss disappeared. This affectionate greeting, very French, had nevertheless crossed the centuries and civilisations until it became a tradition. New signs have begun to replace the kiss: the “elbow to elbow”, the hello with the feet, the inclination of the bust, the hand on the heart... Definitive rupture?
- **European Debt.** The virus has enabled a decisive political breakthrough for the affirmation of Europe’s sovereignty. On a Franco-German proposal, the historic resolution to issue a mutualised European debt on the financial markets triggered a new political era enabling Europe to catch up with the major economic blocs.

31.3.2.5 Purifier or Sanitiser Function

If preserving the planet means accepting the rules of nature, perhaps human mortality should be considered as an adjustment variable. This hypothesis is obviously not audible to society, but nature, through this health crisis, should perhaps ask us about the intrusive behaviour of our lifestyles and their deleterious role in environmental imbalance. Like cyclones leading to the renewal of wooded areas and the elimination of debilitated species, nature seems to be setting up natural purification processes eliminating the weakest elements to encourage the growth of the strongest. The pandemic engendered by the coronavirus and its induced or forced consequences seem to be part of this logic. It thus takes on, in turn, the function of a cleaner, leading to the elimination of the most feeble entities, or a sanitiser by natural consequences or via the implementation of anthropic actions to restore systems or situations affected by the crisis [17].

Examples of this function are given here below.

- **Deaths of Vulnerable Individuals.** People with physiological co-morbidities or heavy therapeutic treatments (chemotherapy, dialysis, organ transplantation, ...) are more likely to suffer from and succumb to a severe form of COVID 19. Independently, social precariousness, another form of vulnerability is also a risk factor for death.
- **Cessation of Payment or Bankruptcies.** Business insolvencies in France could increase by 80% in 2020 as a result of the crisis. Businesses already weakened before the pandemic (airlines, car manufacturers, restaurants, leisure activities, ...) are the first to be affected. Some emerging countries that have defaulted on payments are also close to bankruptcy (Angola, Zambia, etc.).
- **Reduced Noise Pollution and Improved Air Quality.** While containment has significantly reduced pollutant emissions, another more insidious pollution has decreased: noise. Marked by the decline in industrial activities, car or air traffic, a reduction in the average noise level of between 4 and 6 dB has been observed. Unfortunately, the truce is only provisional.
- **Smoking and Drug Use Cessation.** Even though 25% of French smokers have temporarily increased their consumption, the increased risk of infection by the coronavirus and the severe forms of the disease it might cause has prompted many of them to stop smoking. Moreover, difficulties in the supply of drugs have led to a decrease in drug trafficking.
- **Retreat of Extremist Ideas.** In France, extreme parties have not taken advantage of the effects of the crisis to increase their hold. Worse, they have regressed. By deciding to close the borders, the leaders have deprived the extreme right of their flagship argument. The sterile polemics launched by the extreme left on the government's negligence have not received favourable echoes.

31.3.2.6 Questioner and Validator Function

Beyond the simple questioning of the biological and medical aspects related to the appearance of the virus and its curative or preventive treatment, the global and multisectoral crisis engendered by the pandemic has questioned all social and professional categories in every field of activity. The exceptional nature of the scenarios provoked by this type of cataclysm, never experienced or even imagined in the contemporary era, has provided a breeding ground for scientific questions [18]. It also offers a real test basis for the experimentation and validation of the answers that could be given to this type of event or to others with similar consequences.

Without attempting to answer them, we list below a few high-level questions among all the scientific questions raised by the health crisis and its management.

- **Democracy or Totalitarianism.** Which regime is best suited to deal with this type of crisis? How far can freedom go if individual behaviour harms the majority? Is free will compatible with collective security? Are totalitarian regimes better suited to ensure security through coercive or even repressive measures?

- **Globalisation of Health.** Do the economic interests of pharmaceutical companies in the development of a vaccine and the confidentiality that it requires match the need for its rapid availability calling upon nations for transparency of data, sharing of ideas, and results? Is non-profit health globalisation conceivable?
- **Moving From Protectionism to the Precautionary Principle.** Should quality standards and norms replace customs tariffs? Should people first be protected from the risks they face or should companies (and their employees) be protected from competitive threats? Is the resilience of a state a higher value than the efficiency of its economy?
- **Emergency and Caution.** Should administrative or scientific protocols, which are sources of rigour but also of slowness, be relaxed in times of crisis? Therapeutic trials are subject to a methodology and legislation guaranteeing respect for the individual, non-maleficence and justice. What level of urgency can legitimise the lifting of these procedures?
- **Dynamics Between Science and Politics.** The health crisis has raised the question of the contribution of research to government action. Is academic expertise sufficient to legitimise decision-making in times of pandemic? How to reconcile scientific advice and political measures? Are the time horizons of science and politics aligned?

31.4 Conclusion

This chapter aimed to give a panoramic view of the impact of the coronavirus crisis in France. After an observation round describing the phased evolution of the course of events, an analysis was proposed. Considered from a multidimensional angle, dissociating temporal and functional views, the study highlighted the notions linked to the dynamics of the evolution of the phenomena induced by the crisis and the contribution of the virus to proven or potential societal modifications. The analysis shows that all facets of our lifestyles are affected, in one way or another, by this crisis of such an exceptional nature. The impact is, of course, negative in the short term, but looking at the longer term, the fallout from the crisis may have paved the way for beneficial changes in our society. All major social issues are concerned: health, freedom, solidarity, justice, globalisation, sustainable development, national sovereignty, ... The academic world must now take up these subjects. Physical sciences, life sciences, social sciences, applied sciences, engineering sciences, the entire research community must now act in a coordinated manner to find solutions to the harmful effects of this virus but also take advantage of this crisis to build the foundations of a safer, fairer and more respectful world.

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