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Human Rights in the time of COVID-19: response, restrictions, and legitimacy

The interplay between eHealth and Surveillance

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ABSTRACT

The COVID-19 outbreak has triggered the most severe public health crisis in decades. After more than a year of constraints and fears, now is the time to draw a lesson from the recent past and recognise the differences that unite us in a global community. With a special regard to the European Union, the first part of this work evaluates whether States' restrictions to curb infections have complied with the main treaties and conventions enshrined in international human rights law. Following the principles of legality, proportionality, necessity, and time-boundedness, one acknowledges that any limitation on individual freedoms is allowed only under certain serious circumstances. A health emergency caused by a global pandemic is clearly categorised as such. The second part of this work focuses on the right to health and the right to privacy, exploring how artificial intelligence and machine learning applied in healthcare have helped States to carry out their duties. On the one hand, new digital tools based on algorithmic processes have facilitated contact tracing and individual isolation. On the other hand, the collection, storage, and use of a vast amount of personal data have revealed the need to adopt a stronger data protection system, in Europe and elsewhere. Developing and employing smart solutions that are not precisely bound to a specific legal framework may generate a 'ratchet effect' and further infringements on individual freedoms. By examining the topic on multiple levels, this work suggests the adoption of an internationally binding pandemic treaty, centred on human rights, which could reinforce domestic and global resilience.

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Chapter I
On the side-lines of human beings during COVID-19

Since the COVID-19 outbreak was declared a pandemic by the World Health Organization ('WHO') on 11 March 2020[1], States have registered the most severe public health crisis in decades[2]. Not only every country has been affected, but also every segment of society, from childhood to elderly, from public hospitals to private businesses. For their scope and extent, the outcomes of the pandemic are expected to influence future generations as well. The perception of normality, for instance, as conceived before everything started, is just unlikely to be re-established. Indeed, we are humans, we adapt, we know that what is 'normal' today it is not meant to last forever. However, this time, waiting on the side-lines of human beings offers a host of opportunities to take huge steps towards a new way of thinking, of approaching others, of understanding the differences. COVID-19 may have changed our behaviours and paralysed our routines for a while. Still, it has not managed to stop our emotions, our feelings, and our willing to stand in the name of what is inherent in and shared by all of us: our human rights and personal freedoms.

For more than a year, the statement "Emergencies call for extraordinary measures"[3] has been the predominant reason to justify the restrictions on the enjoyment of individual liberties due to state of necessity. In order to probe the deep challenges and changes brought by COVID-19, this chapter starts by recalling some of the main happenings and actions undertaken to address the global spread of the virus to evaluate the strategies to balance among prioritisation and self-restraint, risk-assessment, and States' due diligence. In particular, Section 1.1 approaches the tight curve of the global pandemic to describe the five pillars applied to the COVID-19 response. The key levels for the outbreak management reveal that personal freedoms are interdependent and indivisible and, for this reason, the protection (and potential breach) of human rights may be strengthened (and triggered) at both operational and normative level. In this direction, Section 1.2 addresses the emergency measures as 'needle of the scale', since they have been the outcome of a balance between present concerns and future possibilities (i.e., a matter of priorities). Section 1.3 recalls the three main categories of human rights as recognised by international human rights law: civil and political rights (Section 1.3.1), economic and social rights (Section 1.3.2), and collective rights (Section 1.3.3). Section 1.4 finally opens a more specific debate about human rights during public emergencies to then focus on the infringements occurred from the beginning of the COVID-19 pandemic, both caused by the disease and by the measures aimed at reducing its spread (Section 1.5). Section

[1] Transcript of the World Health Organization, 11 March 2020, *Virtual press conference on COVID-19*.
[2] GOODMAN (2021).
[3] TZEVELEKOS, DZEHTSIAROU (2020: 143).

1.6 reveals that, on the one hand, the pandemic has demonstrated that safeguarding the right to life and the right to health is necessary to protect the ordinary life of a democratic society. On the other hand, however, seeking to fulfil such rights has contributed to increase the conflict between these and other rights. For this reason, the legitimacy of any restrictions on the enjoyment of personal freedoms must always follow the requirements enshrined in international human rights law.

1.1 The tight curve of the global pandemic

Everything has begun when a new form of pneumonia was found in Wuhan, China, and firstly registered by the WHO Country Office on 31 December 2019[4]. Soon classified as a novel coronavirus causing severe acute respiratory syndrome, the viral strain was called "SARS-CoV-2", whereas the disease has become known as "COVID-19". "CO" stands for corona, "VI" for virus, "D" for disease, and "19" for the year of discovery.

Early in January 2020, 41 patients with confirmed infections by SARS-CoV-2 were hospitalised in China[5]. Even though the virus circulated quickly in the country's Wuhan region, it was initially ignored by political leaders in other parts of the world (though intelligence services announced a possibly catastrophic affair[6]). To control infections, Wuhan was placed into lockdown with regional and individual quarantines, and case records in China had stabilised at around 80,000 by mid-February 2020[7]. However, international trade and movement of people had already carried the virus to other continents, and, by mid-March, it was observed in 146 countries[8] (Figure 1). "R", defined as "the rate indicating the contagiousness of an infectious disease"[9], grew via airborne transmission and the number of people falling ill rapidly expanded worldwide[10]. By 15 April 2020, confirmed cases had risen to 2 million (with over 125,000 deaths) in more than 200 countries[11]. With no vaccine and inadequate healthcare resources, most countries resorted to various non-pharmaceutical interventions ('NPIs')[12], as imposition of quarantine or isolation.

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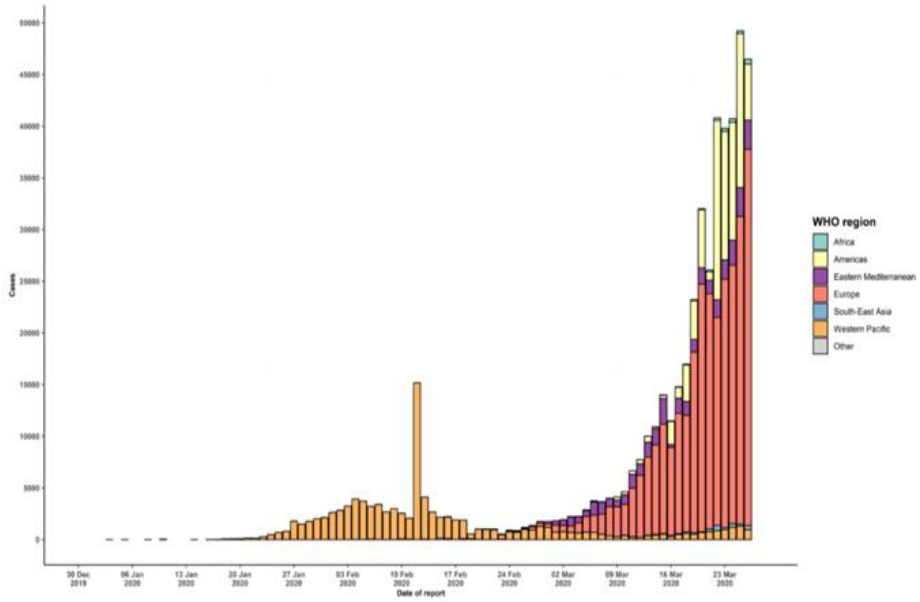
[4] WHO REGIONAL OFFICE FOR EUROPE (2020).
[5] HUANG et al. (2020: 497-498).
[6] DAWSEY, HARRIS, MILLER, NAKASHIMA (2020).
[7] EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL (2021).
[8] GÖSSLING, HALL, SCOTT (2020: 1-2).
[9] RAMIREZ (2020:1).
[10] ANDERSON et al. (2020); HOPKINS (2021).
[11] GÖSSLING, HALL, SCOTT (2020: 3).
[12] NPIs are actions, apart from getting vaccinated and taking medicine, that people can take to help slow the spread of illnesses. For this reason, NPIs are also known as community mitigation strategies. When a new flu virus spreads, causing illness worldwide, the human population has little or no immunity against it, so the virus spreads quickly. NPIs are, thus, a way to control pandemic flu when vaccines are not yet available.

Figure 1**: Epidemic curve of confirmed COVID-19, by date of report from 1 January 2020 to 27 March 2020**



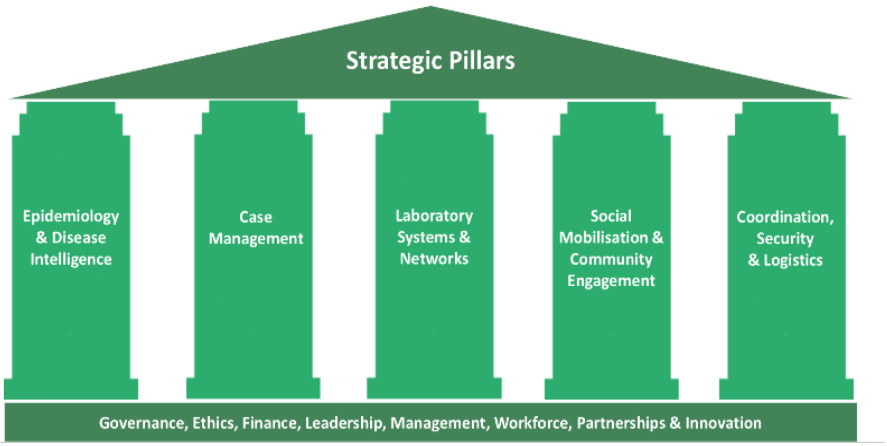
Source: WHO's Coronavirus disease 2019 (COVID-19) Report - 67 (27 March 2020)

Generally, March and April 2020 saw a remarkable expansion of public policies. Many of them have been implemented through limitative measures which have forthwith affected individuals' personal freedoms. In fact, in March, many governments launched social distancing policies, first by recommending populations to physically distance and then by employing systems to test individuals who might be infected, trace their contacts and quarantine verified carriers of the virus at home[13]. Other aspects of the March 2020 policies included drastic measures, such as closing schools to avoid the spread of the virus among the very low-risk population of children and their young adult parents[14]. Soon, universities and non-essential businesses were closed too, events annulled (i.e., major conferences, concerts and fairs, political debates and elections, and sports seasons), and gatherings prohibited. In the last year COVID-19 has evidently influenced all parts of society, not only some sectors. However, each of them has reacted in a different manner, on the basis of what its available resources could bear. Public hospitals and private businesses hit by the crisis have clearly responded following the rules imposed by national governments. The latter, in turn, have been bound to international standards of conduct (i.e., principles and obligations enshrined in international law), as well as to several regulations and recommendations

[13] MURPHY (2020: 39).
[14] MURPHY (2020: 46).

issued by transnational authorities throughout the pandemic[15]. In the EU, for instance, in order to promote a coordinated response to the crisis, the European Centre for Disease Prevention and Control ('ECDC')[16], has established some practical coordination groups which have been hereby categorised into "pillars" for convention (Figure 2). The five columns represent the key thematic areas that experts from different fields have outlined in order to define an efficient and multidisciplinary structure promoting a coordinated action plan to tackle the COVID-19 pandemic and future crisis[17].

Figure 2: Strategic Pillars for COVID-19 outbreak



Source: European Centre for Disease Prevention and Control (ECDC)

The first pillar, "Epidemiology and Disease Intelligence" includes all the technical activities aiming at locating the virus and promoting a tactic against its spread. As a result, the European Commission ('EC') registered €9.8 billion in pledges during the "Coronavirus Global Response" allowing for the progress of diagnostics, treatments, and vaccines[18]. The second pillar, "Case Management", consists of all the strategies to reduce damage and contagion, including isolate incident. For instance, to limit the transmission of the virus in Europe and beyond, the EU has closed its external borders to non-essential

[15] For the general legal framework, see Chapter II of this work. For the specific regulations, see Chapter III and Chapter IV of this work.
[16] The European Centre for Disease Prevention and Control is an agency of the European Union whose mission is to strengthen Europe's defences against infectious diseases. It covers a wide spectrum of activities, such as surveillance, epidemic intelligence, response, scientific advice, preparedness, public health training, international relations, and health communication.
[17] FISHER, CARSON (2020: 598).
[18] Delegated Regulation of the European Commission, 6 August 2020, C/2020/5473, *Amending Delegated Regulation (EU) 2018/985 as regards its transitional provisions in order to address the impact of the COVID-19 crisis.*

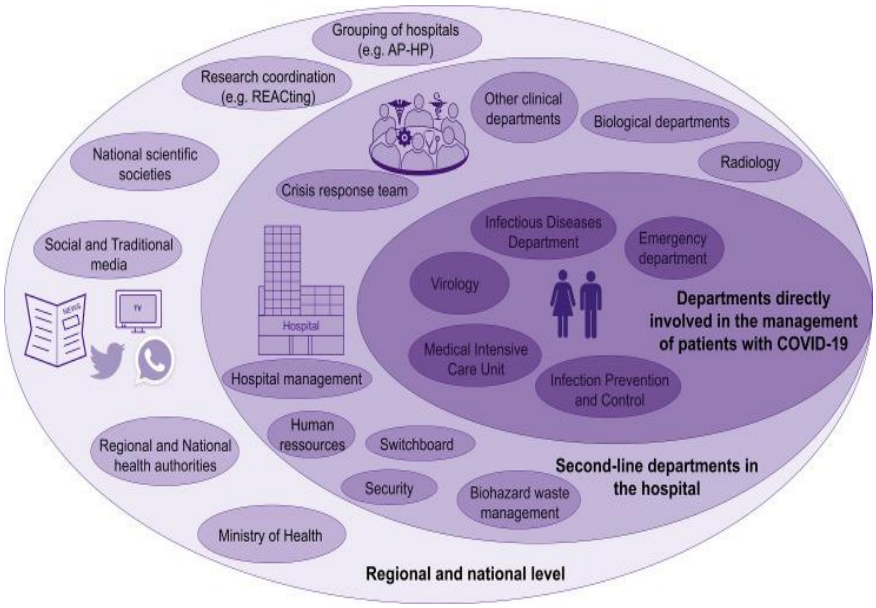
travel, while ensuring essential goods keep moving across the Eurozone[19]. The third pillar, "Laboratory Systems and Networks", facilitates prevention and control. Considering the fourth pillar and the fact that member States and the EU may be pressured by bias around the COVID-19 pandemic, "The EU helps to detect, expose and challenge disinformation by providing accurate and updated information; it also works with online platforms to promote reliable sources, demote fake news and remove illegal content"[20]. This way, social mobilisation and community engagement have been regulated for several activities. Lastly, "Coordination, Security and Logistics" involves all those processes in which legal and ethical experts scrutinise governments' policy making[21]. As illustrated, the base of the stylised temple ("Governance, Ethics, Finance, Leadership, Management, Workforce, Partnership and Innovation") carries the weight of five different columns of coordinating approaches aimed at addressing issue from different points of view. As a matter of fact, "During these times of crisis, across the European Union countries, regions and cities are stretching out a helping hand to each other and to our neighbours, in solidarity between nations, between people, but also between generations"[22]. To this extent, each pillar represents, on the one hand, the need to respond to the pandemic according to the different resources available for each sector (i.e., individual capacity). On the other hand, it underlines the requirement of a strategic coordination among private businesses and public institutions in order to devise a weight-bearing structure (i.e., combined approach).

Following this general organisation, hospitality chains have tried to provide optimal care via a systematic and multidisciplinary management, including specialists in infectious diseases ('IDs'), intensive care units ('ICUs'), and infection prevention and control ('IPC')[23]. As reported in Figure 3, a common strategy in EU Member States and countries of the Organisation for Economic Co-operation and Development ('OECD')[24] covered departments directly involved in the management of patients with COVID-19, second-line departments in the hospital, and regional and national authorities. The three circles in the scheme are concentric (i.e., share the same centre, the larger surrounding the smaller). This represents the three areas contributing to the development of a multilateral approach to reduce hospital overcrowding. Moreover, it illustrates that activities at the regional and national level (e.g., media information) influence the functioning of the middle zone sectors (e.g., crisis response team), which directly determine the management of patients

[19] Communication of the European Commission, 8 April 2020, COM(2020) 148, *On the assessment of the application of temporary restriction on non-essential travel to the EU*, p. 1.
[20] Delegated Regulation C/2020/5473.
[21] ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (2000: 31-72).
[22] Communication COM(2020) 148, p. 2.
[23] BOUDMA et al. (2020).
[24] The Organisation for Economic Co-operation and Development is an international organisation foster prosperity, equality, opportunity, and well-being of individuals through policymaking.

with COVID-19 in the smallest circle (e.g., infection prevention and control). Thus, Figure 3 may be useful to support the idea that, since personal freedoms are interdependent and indivisible[25], so it is their scope. This means that the protection (and potential breach) of human rights may be strengthened (and triggered) at both operational and normative level.

Figure 3**: Key levels for outbreak management**



Source: The National Centre for Biotechnology Information (NCBI)

This brief digression on general structures and common approaches in the EU suggests that human rights concern not only the limitative measures to overcome the pandemic but also the multiple levels of the general decision-making processes. This means that human rights are involved at three hundred and sixty degrees, and this is the reason why this thesis focuses on the multiple challenges that they have been facing throughout the pandemic, from a legal perspective to a more humanistic one. One will see that, in the first place, almost all States have made reference to former national emergencies in order to quickly address the tight curve of COVID-19. Nevertheless, they have soon realised that the mere application of old rules would not be appropriate this time. What makes the current pandemic particularly different from previous health emergencies is the contagiousness of COVID-19 and its globality[26]. As WHO Director General said on the opening remarks at the media briefing on COVID-19: "This is not just a public health crisis; it is a crisis that will touch

[25] NEVES-SILVA, MARTINS, HELLER (2019).
[26] ARIAS-MALDONADO (2020: 5).

every sector – so every sector and every individual must be involved in the fight"[27]. For this reason, all countries have struck a balance among protecting health, preventing a socio-economic collapse, and safeguarding human rights. But such a balancing has soon raised some concerns about which interests should prevail and in which case, due to the lack of a specific regulation to apply for a public emergency of the extent of the COVID-19 pandemic. Alarms about the effects of States' restrictive measures, in particular concerning people's freedom of movement, have been largely expressed by the United Nations High Commissioner for Human Rights ('UNHCHR') and other human rights organisations as soon as they were announced[28], as actions impeding the enjoyment of human rights could easily pave the way to the mishandle of regulations and executive functions. Therefore, even if the balancing of national concerns might depend on states' capacities, the risk assessment criteria, involving human rights, must be objective and thus abide by specific norms, as one will see in the second chapter.

1.2 Emergency measures and their needle of the scale

As soon as the virus reached global awareness, heads of state and government, presidents, and politicians have spoken to their nations putting great emphasis on the necessity of strong measures to contain the proliferation of cases. However, some of them did not define COVID-19 a threat until their country became evidently afflicted by it, as it was for the US President Donald Trump, who alluded to a war versus an invisible enemy only at the end of March 2020[29], when the country had registered 17987 confirmed cases[30] . Other political actors have also resorted to war images to highlight the exceptional situation[31]. For instance, "Nous sommes en guerre", stated French President Emmanuel Macron, heralding a series of forceful actions to limit the spread of contagions[32]. While having its peculiar scenario, every country has addressed the issue taking inspirations from previous impasses (i.e., states of emergencies) and making directly reference to the procedures which had already succeeded in restoring normalcy in war periods (i.e., strong constraints on individual freedoms to prevent safety). For this reason, limitations of rights during the current pandemic seem to be comparable to those facing former international crises, such as armed conflicts and terrorism. What it is similar, at first glance, is that all states in European legal practice have devised a solution in balancing among safeguarding healthcare, avoiding economic and social deadlock, and protecting human rights. What is different, though, is that

[27] Transcript of the World Health Organization, 11 March 2020, *Virtual press conference on COVID-19*.
[28] HOLLAND, MASON (2020).
[29] SPADARO (2020: 317).
[30] ELFLEIN (2021).
[31] EREBARA (2020); KAMBAS, MALTEZOU, PAPADIMAS (2020).
[32] LEMARIÉ, PIETRALUNGA (2020).

the measures against COVID-19 are characterised by the fact that public risk has not relied on political grounds, but on a natural one[33]. Armed conflicts and the fight against terrorism have constituted the essence of politics, as recently observed in relation to the statements of war, with the idea that we have about man, society, freedom, internationalism, and so on[34]. By contrast, a virus has no political affiliation[35]. On the one hand, in the context of armed conflicts and terrorism, elements such as national history and culture profoundly affect the perception of the threat and so the answer to it. On the other hand, in the case of a fight against a virus, it is rather the scientific, technological, and statistical factor that is more likely to shape political choices[36]. Finally, another peculiarity of derogations from human rights promoted against COVID-19 is that, for the first time, the very same virulent enemy appears simultaneously in all Member States of the Council of Europe ('CoE')[37].

This time, the universal scope of the pandemic and the burning relevance of its effects have forced all governments to offer, at the same time, solutions to many overlapping concerns. Limitations on human rights have also been accompanied by new public health mechanisms of surveillance, such as global placing systems, cell phone apps, and facial identification[38], thereby accentuating the traditional hostilities between individual rights and collective interests, within and among States. At present, even though International Human Rights Law ('IHRL') is widely recognised and applied by national governments, the legal verdicts on what is due to the individual by dint of his or her international human rights are still given with regard to the peculiar situation of that individual, which entails designation relative to the situation and the State[39]. This lack of 'transnationalisation' has revealed the inability to equally address transboundary health-related problems or the harmful cross-border effects of domestic policies, such as virus outbreaks and transnational surveillance[40]. Moreover, IHRL often encounters the stalemate of "conflicting goods" versus "particular legitimate goals", both seeking to prevail. Since emergencies require urgent and intense answers, the dilemma amplifies to an extent that does not warrant a win-win situation. On the one hand, lockdown policies implemented to lower the risk of spreading the virus have improved the protection of life and health. But, on the other hand, they have been toxic for the economy[41]. Nevertheless, they have been the outcome of a balance between present concerns and future possibilities (i.e., a matter of priorities).

[33] LUGARÀ (2020: 356).
[34] BIGNAMI (2020).
[35] *Ibid*.
[36] LUGARÀ (2020: 356).
[37] *Ibid*.
[38] DAGRON, FORMAN, MEIER, SEKALALA (2020).
[39] ALTWICKER (2018: 583).
[40] ALTWICKER (2018: 581-606).
[41] TZEVELEKOS, DZEHTSIAROU (2020: 143).

So, in the end, lockdown should be seen more as a protective function than a limitative one.

1.3 The categories of human rights

Conceptually, individual human rights can be divided into different categories, or classes, that reflect the evolution of the law and the nature of the rights[42]. These categories are civil and political rights (Section 1.3.1), economic and social rights (Section 1.3.2) and collective rights (Section 1.3.3). Nowadays, civil and political rights play a major role in international law[43], so one may consider giving them some sort of priority. Nevertheless, it must be noted that the general idea of rights entails its interrelation and mutual dependence[44].

1.3.1 Civil and political rights

The 'oldest' category recognised is composed by those rights of a civil and political nature. These rights, usually referred to as 'first generation' human rights, constitute the basis of the general human rights treaties, including the International Covenant on Civil and Political Rights ('ICCPR) and the European Convention of Human Rights ('ECHR'), both examined deeply in chapter two. They include the prohibition against torture and slavery, the right to life, liberty, fair trial, equality before the law, freedom of speech, religious freedoms as well as certain political anticipatory rights[45]. Most of them are 'negative' since they mainly seek to offer protection from State's interference[46]. In practice, however, effective enjoyment of civil and political rights often requires some positive action on the part of the State, such as the establishment of an efficient police force and a functioning judicial system. Civil and political rights are derived from a set of core principles and values enshrined in the idea of human dignity, which makes them 'absolute', in the sense that in normal conditions they cannot be limited or subject to balancing. Another core value is freedom, both intellectual and physical. The idea of freedom establishes rights such as freedom of expression, freedom of thought, freedom of conscience, and the right to liberty. Yet other powerful values in international human rights law are equality and non-discrimination which protect individuals against ant "differential treatment based solely on the basis of traits and attributes that cannot be altered or should not be required to be

[42] HENRIKSEN (2019: 169).
[43] *Ibid*.
[44] Vienna Convention on the Law of Treaties, Vienna, 23 May 1969.
[45] European Convention on Human Rights (formally the Convention for the Protection of Human Rights and Fundamental Freedoms), Rome, 4 November 1950; Resolution of the UN General Assembly, 16 December 1966, A/RES/21/2200, *International Covenant on Economic, Social and Cultural Rights*.
[46] Vienna Convention on the Law of Treaties, Vienna, 23 May 1969.

altered"[47]. Non-discrimination is, in particular, reflected in the general obligation on all States to respect and guarantee the enjoyment of rights without distinction based on race, sex, language, religion, political opinion or national or social origin[48]. Other important values behind civil and political rights are justice and fairness, core human rights values reflected in the legal principles of proper administration of justice in the legal system. The last set of principles worth mentioning are those concerning political participation, i.e., the right of citizens to participate in the political processes of their society is indeed a fundamental principle in international human rights protection, especially in Europe.

1.3.2 Economic and social rights

The second category of rights concerns economic and social matters, and, on the global level, these rights, often referred to as 'second generation' human rights, are primarily found in the International Covenant on Economic, Social and Cultural Rights ('ICESCR')[49]. In Europe, they are listed in the European Social Charter[50] and they include the right to work, adequate working conditions, including fair wages, a right to social security, an adequate living standard, physical and mental health, and a right to education[51]. As the examples indicate, these rights differ from civil and political rights not only for the values they seek to promote but also because of the role played by the State to fulfil those rights. In practice, the enjoyment of economic and social rights requires a substantial governmental initiative of governments. For this reason, the rights are also referred to as 'positive' rights, in the sense that their achievement requires not 'freedom from government' but rather action by it[52]. However, economic and social rights are generally formulated in abstract terms, hence leaving a wide discretion to the States[53]. Therefore, their judicial enforcement tends to be weaker than enforcement of civil and political rights[54].

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[47] HENRIKSEN (2019: 170).
[48] Charter of the United Nations and Statute of the International Court of Justice, San Francisco, 26 June 1945; Resolution of the UN General Assembly, 10 December 1948, A/RES/217(III), *Universal Declaration of Human Rights*; Convention on the Prevention and Punishment of the Crime of Genocide, Paris, 9 December 1948; Resolution of the UN General Assembly, 16 December 1966, A/RES/21/2200, *International Covenant on Economic, Social and Cultural Rights.*
[49] Resolution of the UN General Assembly, 16 December 1966, A/RES/21/2200, *International Covenant on Economic, Social and Cultural Rights*.
[50] European Social Charter, Turin, 26 February 1965.
[51] *Ibid*.
[52] HENRIKSEN (2019: 171).
[53] *Ibid*.
[54] *Ibid*.

1.3.3 Collective rights

Some human rights instruments focus on the protection of various groups of individuals, most often those groups deemed to be particularly vulnerable and thus in need of special protection. The 1948 Genocide Convention, for instance, obliges States to prevent and punish acts intended to destroy, in whole or in part, a national, ethnical, racial, or religious group as such[55]. The progressive expansions of rights pertaining to specific groups have led to the establishment of another more intangible 'third generation' rights, such as a right to development, a right to peace and a right to the environment. However, lacking an international and specific recognition, "the vagueness of these alleged rights makes any practical application, let alone enforcement, almost impossible"[56].

1.4 Human rights in times of public emergency

Human rights law does not cease to apply in times of emergency or even in times of armed conflicts, as reiterated by the International Court of Justice on numerous occasions[57]. This, however, does not signify that the application of specific human rights may not be affected by an emergency or an armed conflict. First, determining what constitutes a violation of human rights law in times of armed conflict may be influenced by the content of the law of armed conflict that is the relevant *lex specialis*[58]. Secondly, as happened for COVID-19, a State may be entitled to 'derogate' from its human rights obligations and suspend the application of parts of a human rights convention in times of emergency. A valid 'derogation' is, however, subject to a number of conditions that one will later examine in chapter two[59].

1.5 Human rights during COVID-19: infringements at first glance

The spread of a virulent disease prolonged in time and space is likely to trigger a health emergency in which health and security are constantly under pressure. For this reason, health emergencies have been considered part of the public emergencies which, according to international law, allow for some human rights recalibrations. For the COVID-19 pandemic, it is worth considering that the disease itself has threatened the enjoyment of human rights, most prominently the right to life (Article 6 ICCPR) and the right to health (Article

[55] Resolution A/RES/260/(III).
[56] HENRIKSEN (2019: 172).
[57] HENRIKSEN (2019: 182).
[58] *Lex specialis*, in legal theory and practice, is a doctrine relating to the interpretation of laws and can apply in both domestic and international law contexts. According to this doctrine, if two laws govern the same factual situation, a law governing a specific subject matter (*lex specialis*) overrides a law governing only general matters (*lex generalis*).
[59] See *supra* §2.5, Chapter II of this work.

12 ICESCR)[60]. On the other hand, though, the pandemic has also highlighted how human rights are interdependent even if they reflect competing interests that are sometimes hard to reconcile[61].

Throughout the year 2020, among the concerns raised about potential infringements of human rights, the right to life was one of the most evidently affected, having the disease killed millions of people in the world. According to IHRL, and one will better read it later, States have a due diligence obligation to protect individuals from detriment of life triggered by private persons, including attempts on life unintentionally caused by others affected by a contagious and fatal virus[62].

In international law, as we are going to examine later on[63], the prevention and treatment of epidemics is very important for the protection of the right to health and for guaranteeing equal access to healthcare[64] (i.e., access to safe and potable water, and adequate sanitation, food, nutrition, and housing[65]). Still, health is a perfect example of human rights' interdependence. If the spread of a contagious infection destabilises the healthcare system, the danger is not only on the life of those who contract the disease and need medical aid, but also on the right to life and access to healthcare of individuals who must receive treatment for other conditions. On the one hand, the pandemic has demonstrated that safeguarding the right to life and the right to health is necessary to protect the ordinary life of a democratic society. On the other hand, however, seeking to fulfil the right to health has contributed to increase the conflict between these and other rights. During the pandemic, public health policies imposing social distancing and several limitations, aimed at lessening the spread of the disease, have ended up clashing with several other individual rights. One of the most evidently affected was, indeed, freedom of movement, which was quickly restricted through the suspension of international travels and domestic transfers among regions and municipalities. As part of the restrictions, for instance, Italy and France have for several months demanded persons not to leave their house except in special circumstances of necessity (e.g., to buy groceries or to receive medical care) and to validate their movements through a written declaration (if stopped by the authorities)[66].

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[60] SPADARO (2020: 318).

[61] *Ibid*.

[62] TZEVELEKOS, DZEHTSIAROU (2020: 143).

[63] See *infra* Chapter III.

[64] General Comment of the UN Committee on Economic, Social and Cultural Rights, 11 August 2000, E/C.12/2000/4, *No. 14 on the Right to the Highest attainable Standard of Health (Art. 12)*, paras. 12, 16.

[65] General Comment E/C.12/2000/4, para. 11.

[66] Décret du Ministère des Solidarités et de la Santé, 30 Janvier 2021, 2021-99, *Décret modifiant les décrets n° 2020-1262 du 16 octobre 2020 et n° 2020-1310 du 29 octobre 2020 prescrivant les mesures générales nécessaires pour faire face à l'épidémie de COVID-19 dans le cadre de l'état d'urgence sanitaire*; Ordinanze del Ministero della Salute, 12 Marzo 2021, *Ulteriori misure urgenti in materia di contenimento e gestione dell'emergenza epidemiologica da*

One does not need to be a human rights expert to acknowledge the multiple infringements of human rights caused by both COVID-19 as a disease and by the public measures reacting to it. However, one of the purposes of this thesis is that of analysing whether limitations imposed on human rights to tackle the public health crisis have complied with the general legal framework of international human rights law. So, a brief mention to the specific rights affected by the limitations should be done.

1.6 Further breaches on the enjoyment of human rights

From 2020 and onwards, the enjoyment of the right to personal freedom has been clearly damaged both by the isolation imposed onto suspected-ill persons and by the quarantine mandatory for every other healthy individual. Likewise, bans on public gatherings have had an impact on the freedoms of assembly and association (Article 11 ECHR and Articles 21 and 22 ICCPR), even if they were strictly required by the exigences of the situation. The freedom to express one's belief and religion (Article 9 ECHR and Article 18 ICCPR) has been in its place damaged by the closing of places of worship, where people normally convey to pray together[67]. Similarly, closing businesses and workplaces has had effects on the enjoyment of the right to work (Article 23 UDHR, Article 8 ICCPR and Article 6 ICESCR), particularly for those workers who cannot work from home (e.g., day labourer or storekeepers). Shutting down schools and universities has extremely affected the right to education (Article 26 UDHR and Article 13 ICESCR), since "distant learning" has proved incapable of receiving the effective attention of students to understand learning materials[68]. Finally, an interest 'infringement' worth reminding has been provoked by the new surveillance tools intended to trace contacts via mobile data and other artificial intelligence instruments. While aiming at supporting healthcare and reducing hospital congestions, such new monitoring mechanisms have ended up harming the full enjoyment of the right to a private and family life (Article 8 ECHR), to which chapter four dedicates a specific overview.

All the measures, strategies, and human rights concerns highlighted so far are the result of choices not attributable to the mere application of domestic laws. To make it clear, even though single governments have selected the measures to adopt according to their capabilities and peculiar scenarios, the great reference is constituted by the international legal framework. Although it is unable to intervene on the ongoing crisis openly, the European Court of Human Rights ('ECtHR') is one of the most authoritative eyes kept on States' interventions. Therefore, national authorities know that their actions will be

COVID-19 nelle Regioni Puglia, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Lombardia, Piemonte, Veneto, Molise.

[67] SPADARO (2020: 320).

[68] JOSEPH (2020: 8).

somehow scrutinised in the future[69] and this will ensure that any potential constraint to human rights is provided by law.

[69] TZEVELEKOS, DZEHTSIAROU (2020: 144).

Chapter II
The legal framework

> *"At a time of uncertainty, when societies across the globe take rapid and radical measures against the pandemic, I am concerned about potential threats to human rights, privacy and ethical standards, especially towards the most vulnerable. This crisis calls for the best in humanity with ethical principles as our compass"*[70].
>
> UNESCO Director-General, Audrey Azoulay

As discussed in the first chapter, States can limit the exercise of most human rights if that is meant to protect individual rights and other collective interests. However, it is necessary to remember that national governments, albeit having a high decision-making power as regards their domestic laws[71], must adhere to specific legal norms and abide by some relevant rules or procedures when tackling issues involving personal freedoms and human rights. No matter whether they relate to nationals or non-nationals. Yet, the extraordinary situation brought about by the COVID-19 pandemic has led governments to restrict the enjoyment of important liberties in a very broad manner, as to both their scope and extent. In the general response, IHRL has been engaged as a common legal framework to adopt in order to endorse new public regulations aimed at halting, or at least decreasing, the spread of the virus.
But is IHRL perceived in the same manner in every States? Indeed, it is now widely recognised as a core horizontal legal system whose primary purpose is to avoid undue friction between sovereign States[72]. But the respect and the recognition of IHRL aims within national borders are a relatively recent development. In fact, until the middle of the 20th century, the way national governments exercised their powers was largely considered a matter in which other States had no interferences. As the Associate Professor of International Law at Law School Copenhagen, Anders Henriksen, has claimed:

> "With few exemptions, it was not until after the Second World War that international law began to afford individuals protection from their own State only after the Second World War. Human rights law is not an arena of public international law because its substance is inherently international. Rather, its is a part of international law because States have decided in turn the manner in

[70] Comment of the UNESCO Director-General on the Statement of the UNESCO International Bioethics Committee and the World Commission on Ethics of Scientific Knowledge and Technology, 6 April 2020, SHS/IBC-COMEST/COVID-19 REV, *on COVID-19: ethical considerations from a global perspective*.
[71] FABBRINI (2015:15).
[72] HENRIKSEN (2019: 166).

> which they treat individuals under their jurisdiction into a matter of international concern through the adoption of treaties"[73].

To put it in other words, human rights law is part of the international field of cooperation, and it is the outcome of a long process of 'recognition' by national governments which aimed at finding a solution for the conflictual 'interests' that could arise among them.

Certainly, the restrictions imposed by several administrations since March 2020 have achieved positive results (i.e., reduced the impact of the virus on the population). On the other hand, though, they have increased the perception of stress, tension, and disappointment of the civil society as a whole. Thus, it is worth considering that, as we usually keep our precious belongings in a strongbox, countries have been protecting their citizens by putting them in a safe.

In brief, this chapter seeks to provide the legal framework that countries have abided by when intervening in the COVID-19 pandemic. It examines the system of human rights protection emerged since the end of the Second World War, discussing some mechanisms for the enforcement of human rights provisions within the realm of the United Nations, including the European system. The chapter describes the core conventions and their applicability in times of emergency, making reference to previous legal practice, court decisions and the principle of non-intervention (Section 2.1). Then, it lays the foundation of States' obligations under International Human Rights Law, considering that some restrictions to human rights are implemented to comply with such obligations (Section 2.2). Subsequently, the chapter proceeds by recalling the two main multilateral treaties furthered by the Declaration on the Essential Rights of Man proposed at the 1945 San Francisco Conference: the ICCPR and the ICESCR (Section 2.3 and Section 2.3.1). In this direction, differences and similarities are analysed in order to find to which extent the measures implemented during COVID-19 have complied with the provisions contained in IHRL (Section 2.3.2). Section 2.4 addresses the actual obligations recognised by present IHRL (to respect, to protect, and to fulfil) which have been incorporated in all treaties and provisions. Having discussed the differences between conventions and the obligations States must fulfil under IHRL, Section 2.5 focuses on the permissible requirements to interfere with the enjoyment of human rights, whether via limitations or derogations (Section 2.5.1 and Section 2.5.2), to then shift to the legal practice to examine the distinctions and the analogies between limitations and derogations under IHRL (Section 2.5.3 and, for a specific attention on COVID-19, Section 2.5.4) and their judicial control (Section 2.5.5). Section 2.6 contains all the principles behind States' actions to tackle the global pandemic and the fundamental values, principles, and freedoms cherished in the EU legislation. In particular, recommended standards (Section 2.6.1), necessity (Section 2.6.2), time-

[73] *Ibid.*

boundedness (Section 2.6.3), precaution (Section 2.6.4), proportionality (Section 2.6.5), transparency (Section 2.6.6), Solidarity (2.6.7). The aim is to understand why, even if partially varying from one country to another in their effective application, common values are peered as the prerequisites for the legal implementation of any measure against COVID-19. Indeed, such values are enshrined in the international legal practice, albeit several social actors have made direct reference to them to remind the burden of joint action. Finally, the chapter claims that, despite their scope and impact, States' actions undertaken throughout the current pandemic have not necessarily violated their human rights obligations, since the measures that governments have implemented to fulfil their duties are found to be consistent with international norms and thus bounded by limitations itself (Section 2.7 covers States' due diligence and Section 2.8 suggests principles are just beginnings).

2.1 The evolution of International Human Rights Law and the principle of non-intervention

Human rights represent both a moral claim that all humans may invoke and an expression of these claims in positive law, as constitutional guarantees to hold governments responsible. While the former refers specifically to "human rights", the latter is qualified as "human rights law" *stricto sensu*.
In the past, human rights law was strictly associated with national legislation and so were individual complaints against authorities and private persons. The idea that a person is entitled to certain rights as an individual before his or her own State[74], takes back to the epoch of the Enlightenment in the 18th century and in the Western idea of constitutions[75]. In the 19th century, several States adopted national constitutions including fundamental human rights protection. However, rights were generally recognised only if the person was eligible as a citizen, and so often based on theories of social contract. Therefore, they did not pertain to every individual for just being a "human being". By contrast, the modern idea of human rights relies on the assumption that:

> "Human rights are rights *inherent in all human beings*, regardless of race, sex, nationality, ethnicity, language, religion, or any other status. Human rights include the right to life and liberty, freedom from slavery and torture, freedom

[74] A State herein considered is a community formed by people and exercising permanent power within a specified territory. According to international law, a State is defined by Article 1 of the 1933 Montevideo Convention, which depicts a State as a person of international law that possesses a permanent population, a defined territory, a government, and the capacity to enter into relations with the other States.
[75] Examples following the exceptions of *Magna Carta Libertatum* (1215) are the English Bill of Rights (1689), the United States' Declaration of Independence (1776), and the French *Déclaration des Droits de l'Homme et du Citoyen* (1789).

> of opinion and expression, the right to work and education, and many more (emphasis added)"[76].

This great achievement was made possible by the establishment of the United Nations in 1945, primarily conceived to avoid the recurrence of the persecutions perpetrated by the Axis Powers. Listed in Article 1 of the UN Charter, the purposes of the United Nations still are:

> "1. To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;
>
> 2. To develop friendly relations among nations based on respect for the principle of *equal rights and self-determination of peoples*, and to take other appropriate measures to strengthen *universal peace*;
>
> 3. To achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; and
>
> 4. To be a centre for *harmonizing the actions of nations* in the attainment of these common ends (emphasis added)"[77].

Today, the international human rights movement, advocated by several organisations worldwide[78], considers the Charter as a milestone spreading the belief that every State has an obligation to respect the inherent rights of its citizens. Likewise, States and communities have a right (and duty), to take action if other States do not comply with this obligation. It is worth considering that, according to the principle of State responsibility, a State is only accountable for its own conduct[79]. Nevertheless, from the Draft Articles on the Responsibility of States for Internationally Wrongful Acts (2001)[80], it is possible to assert that some legal obligations are 'communitarian' in the sense that they are owed not just to the State that has been injured by a breach

[76] Resolution of the UN General Assembly, 10 December 1948, A/RES/217(III), *Universal Declaration of Human Rights*, Preamble.
[77] Charter of the United Nations and Statute of the International Court of Justice, San Francisco, 26 June 1945, Art. 1.
[78] To name but a few, Amnesty International, Human Rights Watch, Civil Rights Defenders, Human Rights Without Frontiers International.
[79] HENRIKSEN (2019: 128).
[80] Draft articles of the International Law Commission, November 2001, UN Doc. A/56/10 Supplement No. 10 chp.IV.E.1, *on Responsibility of States for internationally wrongful acts*, p. 43; Resolution of the UN General Assembly, 28 January 2002, A/RES/56/83, *Responsibility of States for internationally wrongful acts*.

of the obligation but to the international community as a whole[81]. The norms in question are referred to as having *erga omnes* effects, and violations of IHRL – or at least violations of rights belonging to the very fundamental nucleus of IHRL – can be regarded as pertaining to this category. In *Barcelona Traction, Light and Power Co Ltd (Belgium v Spain)* (1970), the International Court of Justice ('ICJ') recognised the existence of single States' obligations towards the international community as for "the concern of all States and for whose protection all States have a legal interest"[82]. When such norms are violated, all States have the right to invoke the responsibility of the offending State. To this purpose, Article 48.1 of the International Law Commission ('ILC') Draft Articles reads:

> "1. Any State other than an injured State is entitled to invoke the responsibility of another State […] if:
> (a) the obligation breached is *owed to a group of States including that State*, and is established *for the protection of a collective interest of the group*; or
> (b) the obligation breached is *owed to the international community as a whole*.
>
> 2. Any State entitled to invoke responsibility […] may claim from the responsible State:
> (a) cessation of the internationally wrongful act, and assurances and guarantees of non-repetition […]; and
> (b) performance of the obligation of reparation […], in the interest of the injured State or of the beneficiaries of the obligation breached […] (emphasis added)"[83].

To some extent, in enforcing this idea in disputes, the ICJ's jurisprudence has been relatively vague. Having announced the concept, the Court has later taken rather prudent overtures, and it has not declared much on how to identify this type of obligations. Some years ago, a professor of international law at the University of Glasgow, specialised in international dispute settlement (and notably inter-State litigation) has claimed that:

> "[The Court] has expressly recognised a number of narrowly defined examples of obligations *erga omnes*, namely the prohibitions against aggression, slavery, racial discrimination, and genocide whose *erga omnes* status is indeed widely assumed today. More recently, the Court has gone beyond narrowly defined examples when observing that a concept as wide as the right of peoples to self-determination or the rules of international humanitarian embodying '*elementary considerations of humanity*' applied *erga omnes* (emphasis added)"[84].

Even though States are allowed to invoke the non-fulfilment of other States' obligations concerning human rights, it is important to consider that there are

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[81] Vienna Convention on the Law of Treaties, Vienna, 23 May 1969, Art. 43.
[82] Judgment of the International Court of Justice (Second Phase), 5 February 1970, General List No. 50, *Barcelona Traction, Light and Power Company, Limited (Belgium v. Spain)*, p. 6.
[83] Resolution A/RES/56/83, Art. 48.
[84] TAMS (2005: 125).

some limitations to external interventions (i.e., interference). Especially after the Second World War the law of intervention developed rapidly[85]. Under traditional international law, the principle of non-intervention was upheld for the purpose of avoiding a direct or indirect intervention of a State in the internal affairs of another State. However, for an interference to fall within the scope of the principle, it must be "forcible or dictatorial, or otherwise coercive; in effect depriving the State intervened against of control over the matter in question. Interference pure and simple is not intervention"[86]. Considerably, under modern international law, the principle of non-intervention is a global legal norm under Article 2.4 and Article 2.7 of the UN Charter, which read that "*all Members shall refrain* in their international relations *from the threat or use of force against the territorial integrity or political independence of any state*, or in any other manner inconsistent with the purposes of the United Nations (emphasis added)"[87] and that "[…] *nothing shall authorise the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state* […] (emphasis added)"[88]. As a valid support, the UN General Assembly Resolution A/RES/2625 (XXV) declares several principles of international law concerning friendly relations and co-operation among states in accordance with the Charter:

> "Bearing in mind the importance of maintaining and strengthening international peace founded upon freedom, equality, justice and respect for fundamental human rights and of developing friendly relations among nations irrespective of their political, economic and social systems or the levels of their development"[89],

In particular, the principle concerning the duty not to intervene in matters within the domestic jurisdiction of any State reads that:

> "*No State or group of States has the right to intervene directly or indirectly*, for any reason whatever, *in the internal or external affairs of any other State*. Consequently, armed intervention and all other forms of interference or attempted threats against the personality of the State or against its political, economic and cultural elements, are in violation of international law.
>
> No State may use or encourage the use of economic, political or any other type of measures to coerce another State in order to obtain from it the subordination of the exercise of its sovereign rights and to secure from It advantages of any kind, Also, no State shall organize, assist, foment, finance, incite or tolerate

[85] RATTAN (2019: 1).
[86] BUCAN (2013: 55).
[87] Charter of the United Nations and Statute of the International Court of Justice, San Francisco, 26 June 1945, Art. 2.4.
[88] Charter of the United Nations and Statute of the International Court of Justice, San Francisco, 26 June 1945, Art. 2.7.
[89] Resolution of the UN General Assembly, 24 October 1970, A/RES/2625 (XXV), *Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations*, p. 122.

> subversive, terrorist or armed activities directed towards the violent overthrow of the regime of another State, or interfere in civil strife in another State.
>
> The use of force to deprive peoples of their national identity constitutes a violation of their inalienable fights and of the principle of non-intervention.
>
> *Every State has an inalienable right to choose its political, economic, social and cultural systems, without interference in any form by another State* (emphasis added)"[90].

So, non-intervention clearly passes as a crucial principle to ensure single States' sovereignty, territorial integrity, and political independence against the external intrusion of other States.

Customary legal practice has witnessed that different questions were to be solved within the jurisdiction of a State. Still, globalisation has stepped in an international system of cooperation and interdependence, which has shrunk the scope of domestic jurisdiction and enhanced that of international rule. Procedure has shown that on some grounds, States have intervened in the domestic affairs of others not per law[91].

In the context of the COVID-19 pandemic, one may refer to the principle of non-intervention in a more 'theoretical way', in the sense of 'preventing single States from issuing negative comments on the domestic policies made by other States to tackle the pandemic in their territory (i.e., the measures adopted and the extent of derogations). In other words, the principle of non-intervention in a more abstract perception would suggest the impossibility to interfere with single States' decisions to limit certain rights on the basis that every State has an inalienable right to choose its political, economic, social and cultural practices[92]. Under the UN Charter, it is not possible to infringe the principle of non-intervention by acting inconveniently[93]. But since the UN Charter does not clearly define what an 'inconvenient act' signifies, the principle of non-intervention in the abstract should also include external general observations and comments issued by non-authorised persons[94].

Back to the actual application of the principle of non-intervention in IHRL, the option of carrying the so-called "collective intervention" under Chapter VII is an exception to the general principle as mentioned under Article 2.7 of the UN Charter, since it allows the UN Security Council to take collective actions whether there is a threat to the peace, a breach of the peace, or an act

[90] Resolution A/RES/2625 (XXV), p. 123.
[91] RATTAN (2019: 1).
[92] Resolution A/RES/2625 (XXV).
[93] JAMNEJAD, WOOD (2009: 346-356).
[94] From a legal point of view, the comparison seems forced. By contrast, from a humanistic perspective, the principle of non-intervention applied to any comments 'judging' the conducts of national governments would provide States with a broader decision-making autonomy. If intervening means interfering, engaging, or exerting some influence (even if to reconcile), an unauthorised comment or external conditioning may generate resentment, mistrust, and turmoil in the population. Therefore, it should be avoided especially during public emergencies.

of aggression. The Security Council has extensively construed these categories for the purpose of protecting human rights, so as to include therein humanitarian reasons, civil war, and environment catastrophes[95]. The first is the one that may be invoked during a public emergency, as the COVID-19 crisis, since both the disease and a State not fulfilling its obligations may entail a severe breach to the enjoyment of human rights. However, a humanitarian intervention *stricto sensu* requires an intrusion using force to protect the residents of another State who are subjected to serious human rights violation. For the current pandemic, the 'threat' allowing the use of military force is evidently not proportionate to the danger caused by the State itself. As repeated more than once, public health emergencies call for extraordinary measures, including limitations on the enjoyment of human rights, if necessary to realise the general interest of the population. Moreover, humanitarian interventions are justified when they are carried out for the specific objective of ending tyranny or anarchy (i.e., the abuse of power)[96]. The UN cannot intervene in the affairs of any member State simply on the ground of human rights violations but only in case of serious violations in which "the national authorities either are unwilling or unable to protect its nationals and the situation affects international peace and security"[97]. So, even the alleged humanitarian ground does not constitute a precondition to intervene in other governments' internal matters in the present scenario.

2.2 IHRL: from rowdy clashes to constructive conventions

Today, IHRL includes the bodies of international regulations and processes conceived to advance the principle of inter-State cooperation and to promote the respect of human rights and fundamental freedoms in all countries[98]. Although being centred on established guidelines, processes, and institutions, IHRL has developed from former clashes among domestic laws. In fact, as mentioned, throughout most of human history, the way countries treated their own citizens was considered exclusively the government's own business and not a concern of any other country[99]. From an international legal perspective, human rights issues were understood within each State's internal jurisdiction and thus not interpreted in the light of international law's regulations. For instance, the United States could stand up against France in case France harmed somehow an American citizen living in France. This was conceivable according to the idea that the US could simply extend its diplomatic protection on nationals residing abroad[100]. However, under traditional international law,

[95] RATTAN (2019: 5).
[96] *Ibid*.
[97] *Ibid*.
[98] BILDER (2010: 5).
[99] BILDER (2010: 4).
[100] *Ibid*.

the United States could not justifiably criticise France's mistreating its own French citizens because the interference in such matters would allow France to claim for a violation of French sovereignty (by the illegitimate intervention in internal affairs)[101]. So, apart from some exceptions, such as the provisions protecting minorities during the First World War[102], the belief that human rights were not subjected to international rules, but a national concern, was largely taken for granted until the Second World War. It was the fickle application of interstate agreements that, varying according to States' concerns and interests, made it necessary for the legal practice to agree upon universal rules and procedures binding (or at least leading) States to a common implementation of laws, especially in the field of human rights. Yet, previous situations of emergencies made the international community realise that when human rights are involved, the issue hardly opens or closes at single countries' borders[103]. According to the rules on diplomatic protection, a State is entitled to invoke the international responsibility of another State for an international wrongful act to a natural or legal person who is a national of the invoking State in order to fulfil the responsibility[104]. Therefore, efficient relations to protect and promote human rights within and outside national frontiers are to be fostered when national and international rulings cross each other's. Indeed, what is currently identified as IHRL has been fostered by a long process in which the United Nations has managed to place human rights at the basis of many resolutions of conflict, war, or peace settlement among States[105]. Enlarged UN contribution to human rights matters has been echoed by the adoption of regional human rights instruments, international declarations, and recommendations[106] aiming at handling the fragmented nature of diplomatic relationships. The credit of being the first post-war human rights treaty may be awarded to the Convention on the Prevention and Punishment of the Crime of Genocide, adopted by the UN General Assembly on 9 December 1948[107]. However, the Genocide Convention refers to a single manifestation of human rights violation and it is analogous to an international criminal law treaty in many ways since its main elements are the meaning of a crime and the obligations regarding its punishment[108]. So, the already mentioned European Convention on Human Rights was the first comprehensive treaty for the protection of human rights to emerge from the post-Second World War law-making process[109]. Adopted on 5 November 1950, the ECHR, fully named

[101] BILDER (2010: 16); Resolution A/RES/2625 (XXV), p. 121.
[102] FINK (2000: 390).
[103] CRIDDLE, FOX-DECENT (2012: 39-66).
[104] HENRIKSEN (2019: 138-140).
[105] BABBITT (2009: 539-549).
[106] BILDER (2010: 5).
[107] Convention on the Prevention and Punishment of the Crime of Genocide, Paris, 9 December 1948.
[108] *Ibid.*
[109] SHABAS (2014: 10-20).

"Convention for the Protection of Human Rights and Fundamental Freedoms", provides a thorough catalogue introducing relevant definitions of core human rights[110]. The major normative impact of the ECHR was the Universal Declaration of Human Rights (UDHR), a resolution of the UN General Assembly, adopted on 10 December 1948 as:

> "a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction"[111].

For the first time in history, the UDHR statement put into writing basic civil, political, economic, social, and cultural rights that human beings should enjoy, and that contracting parties (i.e., States) must protect (and thus, satisfy). Over time, the UDHR has been generally recognised as the fundamental standard of human rights that everyone should respect and preserve. The UDHR, together with the ICCPR, its two Optional Protocols[112], and the ICESCR, constitute the International Bill of Human Rights.

2.3 Arising interests in the main covenants

Although there are several international human rights instruments to be considered, this section focuses on the two main covenants furthered by the "Declaration on the Essential Rights of Man" proposed at the 1945 San Francisco Conference[113]. Both the ICCPR and the ICESCR are multilateral treaties adopted by the UN General Assembly Resolution 2200A (XXI) on 16 December 1966, and in force from 1976. However, they are different in multiple aspects.

2.3.1 The ICCPR and the ICESCR

In brief, the ICCPR concentrates on issues such as the right to life, freedom of speech, religion, and voting (i.e., rights of "fist generation"), while the ICESCR focuses on food, education, health, and shelter (i.e., rights of "second

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[110] *Ibid.*

[111] Resolution of the UN General Assembly, 10 December 1948, A/RES/217(III), *Universal Declaration of Human Rights*, Preamble, p. 72.

[112] The first optional protocol establishes an individual complaints mechanism, allowing single individual to file a communication with the Human Rights Committee about violations of the Covenant, while the second optional protocol abolishes the death penalty. They vary in the number of State parties.

[113] Charter of the United Nations and Statute of the International Court of Justice, San Francisco, 26 June 1945.

generation"). Both covenants proclaim these rights for all people and forbid discrimination. However, Article 2 of the ICCPR appears more directly binding for States, declaring that:

> "1. Each State Party to the present Covenant undertakes to respect and to ensure to all individuals within its territory and subject to its jurisdiction the rights recognized in the present Covenant, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.
>
> 2. Where not already provided for by existing legislative or other measures, each State Party to the present Covenant undertakes to take the necessary steps, in accordance with its constitutional processes and with the provisions of the present Covenant, to adopt such laws or other measures as may be necessary to give effect to the rights recognized in the present Covenant.
>
> 3. Each State Party to the present Covenant undertakes:
> (a) To ensure that any person whose rights or freedoms as herein recognized are violated shall have an effective remedy, notwithstanding that the violation has been committed by persons acting in an official capacity;
> (b) To ensure that any person claiming such a remedy shall have his right thereto determined by competent judicial, administrative or legislative authorities, or by any other competent authority provided for by the legal system of the State, and to develop the possibilities of judicial remedy;
> (c) To ensure that the competent authorities shall enforce such remedies when granted"[114].

Article 2 of the ICESCR, defining the right to non-discrimination and the right to an effective remedy, reads that:

> "1. Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.
>
> 2. The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.
>
> 3. Developing countries, with due regard to human rights and their national economy, may determine to what extent they would guarantee the economic rights recognized in the present Covenant to non-nationals"[115].

[114] International Covenant on Civil and Political Rights (ICCPR), New York, 16 December 1966, Art. 2.
[115] International Covenant on Economic, Social and Cultural Rights (ICESCR), New York, 16 December 1966, Art. 2.

Since the scenario embracing this legal framework is constitute by the COVID-19 pandemic, this section mainly concentrates on the right to liberty, freedom of movement and the right to health. Nevertheless, these three are not the only rights involved during a health emergency whatsoever.

2.3.2 Foreseeable human rights constraints under ICCPR and ICESCR: differences and similarities

As mentioned, political rights covered by Article 25 ICCPR may be affected if a state of emergency is declared in an election year. Furthermore, the right to education under Article 13 ICESCR may be restricted when schools are closed as part of social distancing measures, as occurred in many countries.

The right to liberty under Article 9 ICCPR can be constrained on lawful bases regardless of a national state of emergency. The right-specific limitation clause of the freedom of movement within a State and the right to leave the country under Article 12.3 ICCPR are slightly different. Limits on freedom of movement are reduced to those required to protect national security, public order, public health or morals, or the rights and freedoms of others, as during the time of COVID-19. Without a precise formula to assess social values, governments ought to strike a balance between strict social distancing and the right to health. But executive *ultra vires* use of powers is risky because accountability (for exceeding authority) may be postponed in emergency times. Another matter is, indeed, that of compulsory curfews, which may be considered necessary and proportionate if introduced gradually[116]. The common development has rapidly shifted from voluntary isolation, to quarantine, and eventually lockdowns. So, guaranteeing practical safeguards of human rights under both ICCPR and ICESCR in contexts of general (and quick) limitations proves to be more complex. For instance, it is plausible that people being tested negative for COVID-19, remaining subject to movement restrictions, will aspire to stand against the restrictive measures, albeit being unable to do so during the emergency. Comparably, international travel bans challenge the scope of the right to leave any country (i.e., freedom of movement). But it is stated that, even if exceptional travel restrictions are not forbidden, "no one shall be arbitrarily deprived of the right to enter his own country"[117]. Actually, human rights bodies have not been predisposed to give broad guidance on reasonable moving restrictions during the pandemic. Whilst measures such as lasting house detention amount to a deprivation of liberty, the ICCPR does not suggest that quarantine (i.e., the restriction of individual freedom) should be a last resort option[118] or that confinement to

[116] General Comment E/C.12/2000/4, para 29.
[117] See ICCPR, Art. 12.4.
[118] Resolution of the UN Economic and Social Council, 28 September 1984, E/CN.4/1985/4, *The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights*, Art. 11.

prevent the spread of an infectious disease is proportionate only if enforced on individuals posing a public danger[119]. Among the countries which ratified the ICCPR, the most severe measures were adopted by Italy, France, and Spain. Beyond the ICCPR outline, serious actions can be witnessed in the People's Republic of China, a signatory State that did not ratify the ICCPR.
For what concerns the right to health, the latter is ensured under Article 12 ICESCR and includes governmental control over the spread of communicable diseases, as well as through restrictive measures for the protection of public safety[120]. This right comprises access to health facilities, goods, and services, and the prevention, treatment and control of epidemic, endemic, occupational, and other diseases. Therefore, outside of the emergency situation, States are expected to take positive action (e.g., to develop prevention and education programs; ensure the availability of adequate medical tools). Later in chapter three we will explore how the ICCPR does not specifically safeguard the right to health, though the right to liberty and security guaranteed under Article 9 requires that any measures compelling hospitalisation be proportionate and necessary[121]. Furthermore, access to health-related knowledge is an essential part of the right to access to information protected by both the ICCPR and the ICESCR[122]. Also, differentiating measures according to the persons (i.e., triaging), may be lawful during emergencies if they are necessary and proportionate and if they "[do] not involve discrimination solely on the ground of race, colour, sex, language, religion or social origin"[123]. So, when the drafters of international instruments could not anticipate the difficulty of future extraordinary events, flexible mechanisms (i.e., ICCPR and ICESCR) let States recalibrate human rights compliance in circumstances of urgence. Necessity provides authority-holders with a large margin of appreciation of public interest and of their positive obligation to protect the people. As a state of emergency can sometimes be used as an excuse for abuses, such as arbitrary detention, censorship, or other authoritarian measures, the appeal to more determinate laws to restrict state discretion under human rights law is legitimate. There are rising worries that some governments might exploit emergency powers to undercut democratic principles, eradicate dissent, and infringe the principles on necessity and proportionality. Treaty ratification can, thus, serve as a sign that States aim to fulfil their human right commitments, whereas notifications of derogations reveal high transparency in terms of respect for human rights and the rule of law. The COVID-19 pandemic has illustrated that reaching a balance between protecting health, and avoiding economic and social disorder is not a straightforward assignment

[119] Judgment of the European Court of Human Rights, 25 January 2005, Application no. 56529/00, *Enhorn v. Sweden*.
[120] General Comment E/C.12/2000/4, para. 16.
[121] General Comment of the UN Human Rights Committee, 16 December 2014, CCPR/C/GC/35, *No. 35 on Article 9 (Liberty and security of person)*.
[122] See ICCPR, Art. 19.2; General Comment E/C.12/2000/4, para(s). 17, 44.
[123] General Comment E/C.12/2000/4, paras. 18, 35.

for policy makers. However, in order to ensure the respect of the right to health during the ongoing crisis, States must cautiously seek to find a steady equilibrium between individual rights and collective responsibilities which would be feasible also in the long run. As IHRL reveals, this is more likely to be achieved when States commit to comply with the international obligations established in alleged treaties and conventions.

2.4 To respect, to protect, to fulfil, and beyond

Present IHRL, by incorporating all treaties and provisions, sets out the obligations that States must fulfil while processing duties or implementing laws. In fact, as indicated in Article 1 ECHR: "The High Contracting Parties [i.e., States] shall secure to everyone within their jurisdiction the rights and freedoms defined in […] [the] Convention"[124]. The general interpretation emerging from many judgements through the years is that the ECHR must be understood and applied in a way which renders its human rights provisions practical and effective, not abstract, nor illusory[125]. Yet, by ratifying international human rights treaties, national governments have been driven towards the establishment of a domestic legislation that would necessarily be compatible with their international commitments and responsibilities:

> "Everyone, as a member of society, has the right to social security and is entitled to realisation, through national effort and international cooperation and in accordance with the organisation and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality"[126].

As a direct result, where national legal proceedings fail to address human rights issues, instruments for individual complaints are accessible at both the regional and international levels to ensure that international human rights principles are recognised, accepted, and applied at the local level[127]. Although the protection of human beings is the major goal of all international instruments intended to establish further rights, such protection hinges, apart from the protection procedures in place, on the obligations of the State

[124] European Convention on Human Rights (formally the Convention for the Protection of Human Rights and Fundamental Freedoms), Rome, 4 November 1950, Art. 1.
[125] Judgments of the European Court of Human Rights, 10 February 2009, application No. 14939/03, *Sergey Zolotukhin v. Russia*; 25 April 1978, No. 5856/72, *Tyrer v. the United Kingdom*; 11 July 2002, No. 28957/95, *Christine Goodwin v. the United Kingdom*; 18 February 2009, No. 55707/00, *Andrejeva v. Latvia*; 13 May 1980, No. 6694/74, *Artico v. Italy*; 29 June 2007, No. 15472/02, *Folgerø and Others v. Norway*; 27 November 2008, No. 36391/02, *Salduz v. Turkey*, 17 September 2009, No. 10249/0317, *Scoppola v. Italy (2)*; 15 October 2009, No. 17056/06, *Micallef v. Malta*.
[126] Resolution A/RES/217(III), Art. 22, p. 75.
[127] UN OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS (2013: 3-11).

parties[128]. As Article 47 of the European Union Charter of Fundamental Freedoms reads:

> "Everyone whose rights and freedoms guaranteed by the law of the Union are violated has the right to an effective remedy before a tribunal in compliance with the conditions laid down in this Article.
> Everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal previously established by law. Everyone shall have the possibility of being advised, defended and represented […]"[129].

The effective assumption derived from this article suggests that States' responsibilities should be understood in the sense which best protects the individual. Where obligations are involved, international conventions should be read considering social happenings and so the progressive nature of States' obligations defined by the international legal framework. As international human rights treaties and customary law holds, States must comply at least with three obligations, implicit in the ECHR, naming the obligation to respect, the obligation to protect, and the obligation to fulfil. While balancing between these responsibilities may vary according to the specific case law and the parties involved in the dispute, State duties relate to all civil, political, economic, social, and cultural rights[130]. Therefore, States have a duty to provide a remedy at the domestic level if human rights violations are to be found. Firstly, the "obligation to respect" implies that States are required to refrain from interfering in the enjoyment of rights by individuals and groups[131]. In brief, "respect" means prohibition of State actions that may prejudice the enjoyment of rights. For example, regarding the right to education, it means that governments must respect the freedom of parents to choose private schools and to ensure the religious and moral education of their children in accordance with their personal convictions.
Secondly, the "obligation to protect", stipulates that the international community has an intrinsic obligation to interfere within other sovereign States with to respond to the commission of mass atrocity crimes for the purpose of protecting people at risk[132]. While the framework foresees pre-emptive intrusions for humanitarian reasons in States at risk of, or already suffering, violent conflict, other global threats to human security not considered in the obligation, for instance the Covid-19 pandemic, it might also find relevance in its application. The obligation to protect reveals both a preventive and remedial aspect. The economic crisis related to COVID-19 will, if not counterbalanced, incentivise conflict and take the lead to anarchy and collapse that will in turn entice further crimes in conflict-affected and

[128] AKANDJI-KOMBE (2007: 5).
[129] Charter of Fundamental Rights of the European Union, Nice, 7 December 2000, Art. 47.
[130] KARP (2020: 83-108).
[131] CONFORTI, FOCARELLI (2016: 137).
[132] Report of the High-level Panel on Threats, Challenges and Change, 2 December 2004, A/59/565, *A more secure world: our shared responsibility*.

unsteady States. In implementing the responsibility to protect, the international community is obliged to (1) pass legislation protecting human rights, (2) take steps to protect individuals when it is informed (or could have been informed) of risks to their human rights, and (3) guarantee access to fair legal remedies when human rights breaches are claimed.

Once again, the right to education can provide an example. The right of children to education must be protected by the State from interferences by third parties, involving parents and family, teachers and school, religions, clans, and businesses. States have the benefit of a margin of discretion with respect to the obligation to protect[133]. For instance, the right to personal integrity and security requires States to fight the pervasive phenomenon of domestic violence against women and children. States have a duty to take affirmative actions (i.e., appropriate criminal, civil, family, or administrative laws, police, and judiciary training) to lower the occurrence of domestic violence[134].

Finally, by tallying the "obligation to fulfil", States are required to perform positively to ensure that human rights can be achieved. Compared to the previous two, the scope of the obligation to fulfil differs according to the right at stake and the single State's available resources[135]. Usually, though, "positive obligations to fulfil human rights go beyond the obligation to afford protection against violations by private actors or risks emanating from natural forces"[136]. In other words, the obligation to fulfil expects States to establish the legal, institutional, and procedural conditions that rights owners require in order to realise and enjoy their rights in full. This may call for action on a variety of levels. By fulfilling the right to education, for instance, States must guarantee a free and compulsory primary education for all, free secondary education, higher education, and the eradication of illiteracy. But this last obligation entails the possibility to take actions on multiple levels, each of them related to the others. Therefore, the so-called "principle of progressive realisation" pertains to the positive State obligations to fulfil, above all, social and cultural rights[137]. The human right to health, for instance, does not ensure the right of everyone to be healthy. Still, it does require States, in accordance with their individual economic capabilities, social and cultural traditions, including international standards, to create and preserve a public health system ensuring access to some basic health services to everyone:

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133 CONFORTI, FOCARELLI (2016: 388-390).
134 AKANDJI-KOMBE (2007: 32).
135 AKANDJI-KOMBE (2007: 33).
136 KÄLIN, KÜNZLI (2009: 112).
137 Resolution of the UN General Assembly, 16 December 1966, A/RES/21/2200, *International Covenant on Economic, Social and Cultural Rights, International Covenant on Civil and Political Rights and Optional Protocol to the International Covenant on Civil and Political Rights*.

> "Health is a fundamental human right indispensable for the exercise of other human rights. Every human being is entitled to the enjoyment of the highest attainable standard of health conducive to living a life in dignity. The realisation of the right to health may be pursued through numerous, complementary approaches, such as the formulation of health policies, or the implementation of health programmes developed by the World Health Organization, or the adoption of specific legal instruments. Moreover, the right to health includes certain components which are legally enforceable"[138].

Progressive realisation means that the lack of positive measures to advance the public health system, regressive measures, or the marginalisation of certain groups (e.g., women and religious or ethnic minorities) in healthcare can be considered a violation of the right to health and thus an obligation not fulfilled. Beyond the first three obligations, another important duty to consider is the right to an effective remedy, cherished in Article 13 ECHR, according to which "Everyone whose rights and freedoms as set forth in [the] Convention are violated shall have an effective remedy before a national authority notwithstanding that the violation has been committed by persons acting in an official capacity"[139]. Both the UN Human Rights Committee and the Committee on the Elimination of Racial Discrimination ('CERD') have specified that the right to an effective remedy incorporates an obligation to bring to trial perpetrators of human rights harms, including discrimination, and to deliver proper compensation to victims. In the light of human rights law, every person who asserts that his or her rights have not been respected, protected, or fulfilled must be able to obtain an effective remedy before a competent and independent internal body vested with the authority to command compensations and enforcements[140]. Failure to do so may imply a foreseeable violation of the Convention and the subsequent treaties.

Negative obligations, which basically require States not to interfere in the enjoyment of rights, have always been regarded as inherent in the European Convention[141]. By contrast, positive obligations, depending on States' available resources, are more difficult to accomplish and thus tricky to assert as fulfilled or unfulfilled[142]. The Committee on Economic, Social and Cultural Rights ('CESCR') explains that violating the obligation to respect the right to the highest attainable standard of physical and mental health means taking actions that "are likely to result in bodily harm, unnecessary morbidity, and preventable mortality"[143]. An example of potential infringements during the

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[138] General Comment of the UN Committee on Economic, Social and Cultural Rights, 11 August 2000, E/C.12/2000/4, *No. 14 on the Right to the Highest Attainable Standard of Health (Art. 12)*, para. 1.

[139] European Convention on Human Rights (formally the Convention for the Protection of Human Rights and Fundamental Freedoms), Rome, 4 November 1950, Art. 13.

[140] COUNCIL OF EUROPE (2021: 7-20).

[141] GERARDS, GLAS (2017: 15).

[142] GARCIANDIA (2020: 167-177).

[143] General Comment E/C.12/2000/4, para. 50.

current COVID-19 crisis is the deliberate suppression or falsification of information necessary to protect the health and treatment of the ill[144].
At present, in public international law, there is no binding and enforceable obligation for States to avert pandemics within their borders or to help other States control their pandemics[145]. Nonetheless, it could be considered under the international obligations found in Article 40 of the Committee on Economic, Social, and Cultural Rights ('CESCR') General Comment on Article 12 ICESCR, which recites that:

> "States parties have a joint and individual responsibility, in accordance with the Charter of the United Nations and relevant resolutions of the United Nations General Assembly and of the World Health Assembly, to *cooperate in providing disaster relief and humanitarian assistance in times of emergency* […]. *Each State should contribute to this task to the maximum of its capacities*. Priority in the provision of international medical aid, distribution and management of resources, such as safe and potable water, food and medical supplies, and financial aid should be given to the most vulnerable or marginalized groups of the population. Moreover, given that some diseases are easily transmissible beyond the frontiers of a State, *the international community has a collective responsibility* to address this problem. The economically developed States parties have a special responsibility and interest to assist the poorer developing States in this regard (emphasis added)"[146].

If for diseases that are easily transmittable every State has a joint responsibility to confront them, taking a nation-centric perspective is just not realistic in pandemic circumstances. Thus, the obligations borne by every country in the current situation involve not only the nationals living within state borders, but also all members pertaining to other communities, nations or peoples who can potentially be affected by the behaviour of a national citizen. In the end, health is a shared responsibility, including equitable access to basic care and mutual defence against transnational threats[147]. COVID-19 may have begun in Wuhan, China, but it befell an international virulent disease that has infected several countries, resulting in an extraordinary setback for the whole world.
Under IHRL, Article 12 ICECSR affirms that the States parties to the Covenant recognise "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health"[148], thus an obligation to protect, respect, and fulfil the right to health. In addition, the International Health Regulations ('IHR') of 2005[149] represents the most important set of guidelines describing States' duties specifically regarding health. At first glance, Article 6 IHR recites that:

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[144] *Ibid.*
[145] HALPERN (2020: 13).
[146] General Comment E/C.12/2000/4, para. 40.
[147] WORLD HEALTH ORGANIZATION (2020a).
[148] See ICESCR, Art. 12.
[149] International Health Regulations of the World Health Organization, 25 May 2005, WHA58.3.

> "Each State Party shall assess events occurring within its territory […], notify WHO, by the most efficient means of communication available, […], and within 24 hours of assessment of public health information, of all events which may constitute a public health emergency of international concern […], as well as any health measure implemented in response to those events […]"[150].

Following a notification (Fig.4):

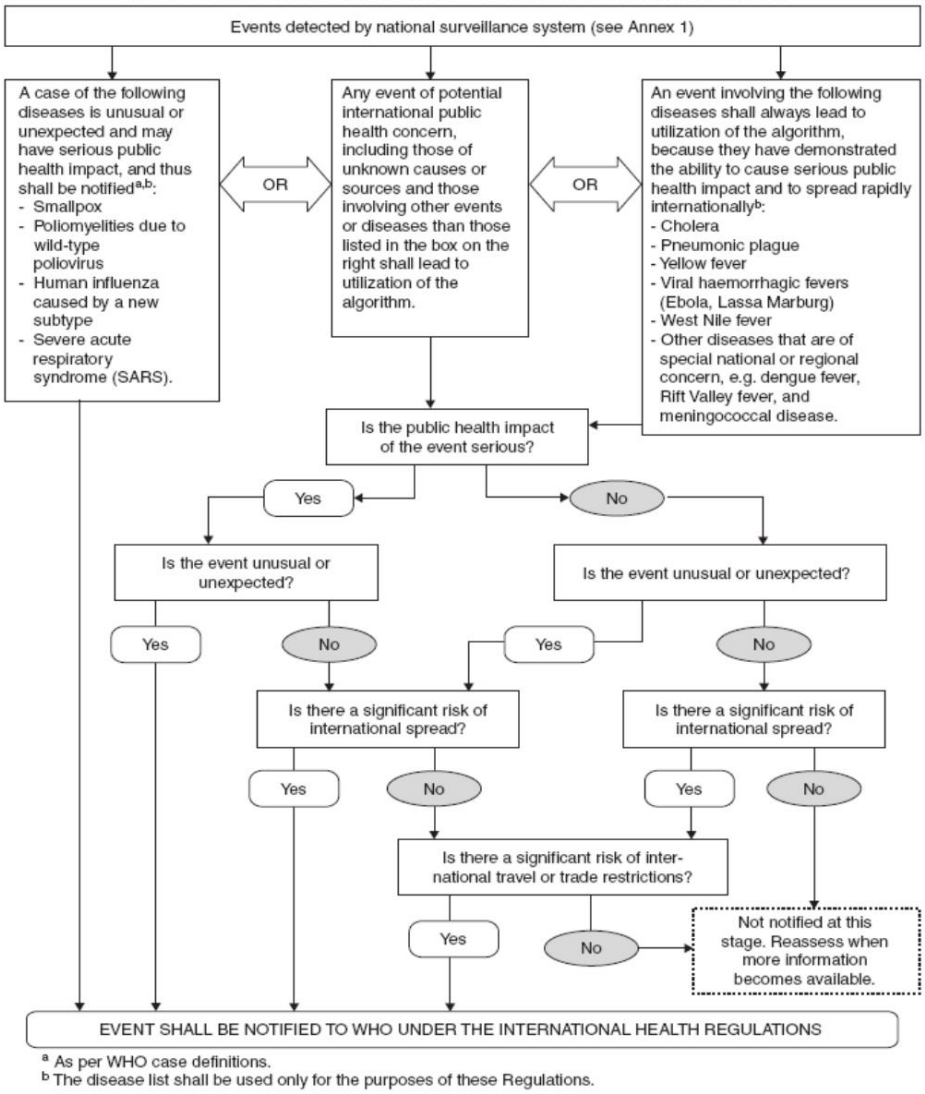
> "a State Party shall continue to communicate to WHO timely, accurate and sufficiently detailed public health information available to it on the notified event, where possible including case definitions, laboratory results, source and type of the risk, number of cases and deaths, conditions affecting the spread of the disease and the health measures employed; and report, when necessary, the difficulties faced and support needed in responding to the potential public health emergency of international concern"[151].

Article 6 IHR expresses the obligation, and responsibility, for States to notify the WHO and the other States about their internal health condition, available resources and, above all, the specific risks encountered while tackling a (potential) health problem of international concern. This could be read, indeed, as a health-related obligation to respect, protect, and fulfil the right of health and information of both individuals and international community.
Moreover, among the general obligations explicitly outlined in the IHR, the progressive realisation of States' duties is legible in Article 19, which recites:

> "Each State Party shall […] identify the competent authorities at each designated point of entry in its territory, and furnish to WHO, as far as practicable, when requested in response to a specific potential public health risk, relevant data concerning sources of infection or contamination, including vectors and reservoirs, at its points of entry, which could result in international disease spread"[152].

[150] International Health Regulations of the World Health Organization, 25 May 2005, WHA58.3, Art. 6.
[151] *Ibid.*
[152] WHA58.3, Art. 19.

Figure 4: Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern



Source: WHO Guidance for the Use of Annex 2 of the International Health Regulations (2005)

The rationale behind those obligations is to be found in the necessity of making the international community aware of the domestic situations of countries in order to both prevent the spread of disease outside their borders and provide support to respond to the crisis. Nowadays, the IHR is legally binding upon many States and the obligation to supervise and report a

potential threat to health is clearly envisioned in Annex 1 to the IHR[153]. As for international cooperation, Article 44 IHR reads that:

> "States Parties shall undertake to collaborate with each other, to the extent possible, in:
> (a) the detection and assessment of, and response to, events as provided under these Regulations;
> (b) the provision or facilitation of technical cooperation and logistical support, particularly in the development, strengthening and maintenance of the public health capacities required under these Regulations;
> (c) the mobilization of financial resources to facilitate implementation of their obligations under these Regulations; and
> (d) the formulation of proposed laws and other legal and administrative provisions for the implementation of these Regulations"[154].

However, as the WHO has elucidated, the IHR does not own an enforcement mechanism but instead "relies on the consequences of peer pressure and public knowledge to hold States to their obligations"[155]. Therefore, under the IHR, an obligation for States can be observed under public international law to equally avert and limit pandemics within their borders as well as to collaborate with the international community to support prevention. So, while States created the UN to improve mutual aid among them, the IHR is still purely a suggestion rather than a solid, legal obligation. Indeed, it offers a toolkit for member States to counteract and restrict infectious diseases within their own countries and to collaborate to support others. Yet, the hurdle remains its enforcement. The way ahead may be considering establishing an effective implementation mechanism, providing for UN sanctions or other States' interventions based on their obligations to respect, protect, and fulfil human rights.

Proclaiming "a war against COVID-19"[156], or against any other virus, may be useful to classify similar phenomena but, at the same time, it is likely to foster the abuse of authority or uncontrolled powers. In 2013, the opening letter on the United States Institute of Peace report on the responsibility to protect assumed that "fundamental values require all of us to work responsibly to protect potential victims from the worst that humankind has to offer"[157]. In the whole document, the responsibility to protect grants countries to defend victims from humankind, and, for this reason, it has been conventionally associated with actions of force against aggressors (i.e., military interventions)[158]. In the light of the current pandemic, it is reasonable to imagine this "obligation to do something" in another way, for another "enemy". Increasing awareness of States about the responsibility to protect

[153] WHA58.3, Art. 6.
[154] WHA58.3, Art. 44.
[155] HALPERN (2020: 7).
[156] HOLLAND, MASON (2020); LEMARIE, PIETRALUNGA (2020).
[157] ALBRIGHT, WILLIAMSON (2013: 3).
[158] DEWS (2013).

human rights against a non-human adversary, such as COVID-19, should be converted into a duty to aid, to help, and to provide resources. Undeniably, public health emergencies constantly require States to act in a positive manner. In order to meet the obligations established by IHRL, one may recognise that States have been relatively forced to impose, as necessary, some limitations to, and/or derogations from, human rights. The latter have the main purpose of overcoming the impasse caused by the outbreak of the pandemic and avoiding further complications for civil society inside and outside States' borders.

2.5 Legal requirements to limit and derogate human rights

Having discussed the differences between conventions and the obligations States must fulfil under IHRL, one should now focus on the permissible requirements to interfere with the enjoyment of human rights, whether via limitations or derogations. It is worth reminding that certain human rights, such as the freedom from torture and slavery, are absolute and thus permit no limitations, comparing to other rights or practicable derogations[159]. Nevertheless, most human rights are not absolute and so can be constrained, albeit within specific boundaries. IHRL treaties explicitly allow for two instruments that could and are being employed by States to take actions to handle the COVID-19 pandemic affecting several human rights. Those two legitimate instruments are officially recognised as "limitations" and "derogations".

2.5.1 Limitations under IHRL

Limitations permit the balancing between individual and collective interests which may otherwise remain a reason of conflict. These limitations are envisaged in some provisions of the ICCPR and of the ECHR in combination with its Protocols. Limitations to non-absolute rights are tolerated when they are (1) prescribed by law, (2) assigned to a legitimate aim, and (3) when essential in a democratic society"[160]. As reiterated by several documents, such limitations should always be proportionate to the legitimate purpose, meaning that no other less restricting option results available[161]. Concerning questions which may now be applied to the current pandemic, the 2000 CESCR General Comment had stated that:

> "Issues of public health are sometimes used by States as grounds for limiting the exercise of other fundamental rights. The Committee wishes to emphasize

[159] See ICCPR, Arts. 7, 8, 11, 15, 16.
[160] Resolution A/RES/21/2200.
[161] Resolution E/CN.4/1985/4, Art. 10; General Comment of the UN Human Rights Committee, 26 May 2004, CCPR/C/21/Rev.1/Add.13, *No. 31(80) on the Nature of the General Legal Obligation Imposed on States Parties to the Covenant*, para. 6, p. 3.

> that the Covenant's limitation clause, article 4, is primarily intended to protect the rights of individuals rather than to permit the imposition of limitations by States. […] Such restrictions must be in accordance with the law, including international human rights standards, compatible with the nature of the rights protected by the Covenant, in the interest of legitimate aims pursued, and strictly necessary for the promotion of the general welfare in a democratic society".
> […], such limitations must be proportional, i.e., the least restrictive alternative must be adopted where several types of limitations are available. Even where such limitations on grounds of protecting public health are basically permitted, they should be of limited duration and subject to review"[162].

While articulated in different ways, both the ECHR and the ICCPR recognise certain legitimate aims as conditions for limiting a series of rights, such as the right to respect for private and family life (Article 8 ECHR), freedom to manifest one's religion or belief (Article 9 ECHR and Article 18 ICCPR), freedom of expression (Article 10 ECHR and Article 19 ICCPR), freedom of assembly and association (Article 11 ECHR and Articles 21 and 22 ICCPR) and freedom of movement (Article 2 ECHR Protocol No. 4 and Article 12 ICCPR). For instance:

> "Public health may be invoked as a ground for limiting certain rights in order to allow a State to take measures dealing with a serious threat to the health of the population or individual members of the population . These measures must be specifically aimed at preventing disease or injury or providing care for the sick and injured"[163].

2.5.2 Derogations under IHRL

For what concerns derogations, in periods of public emergency, threatening the life of a nation and its inhabitants, the option for States to derogate from a few obligations under human rights law is lawfully envisioned. Derogations entail the temporary interruption of certain human rights and are therefore permitted only to the extent that they are deemed essential by the pressures of the situation and are not belittling for other States' obligations under international law (e.g., the principle of non-discrimination)[164]. Derogations must additionally adhere to the notice procedures defined in Article 4 ICCPR and Article 15 ECHR[165] accordingly, which implies that the state of emergency be openly decreed and properly transmitted[166].

2.5.3 Legal practice, distinctions and analogies

As regards to the practice of both limitations and derogations, the Human Rights Committee clarified that:

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[162] General Comment E/C.12/2000/4, Arts. 28,29.
[163] Resolution E/CN.4/1985/4, para. 25.
[164] SPADARO (2020: 321).
[165] See *supra* §5.1.1, Chapter V of this work.
[166] *Ibid.*

> "The issues of when rights can be derogated from, and to what extent, cannot be separated from the provision in article 4, paragraph 1, of the Covenant according to which *any measures derogating from a State party's obligations under the Covenant must be limited 'to the extent strictly required by the exigencies of the situation'*. This condition requires that States parties provide careful justification not only for their decision to proclaim a State of emergency but also for any specific measures based on such a proclamation. If States purport to invoke the right to derogate from the Covenant during, for instance, a natural catastrophe, a mass demonstration including instances of violence, or a major industrial accident, they must be able to justify not only that such a situation constitutes a threat to the life of the nation, but also that all their measures derogating from the Covenant are strictly required by the exigencies of the situation […] (emphasis added)"[167].

These observations would also seem appropriate in a pandemic situation, which was not explicitly mentioned by the Committee. Similarly, in order for a derogation to the ECHR to be admissible, there must be an actual or imminent public emergency, concerning the whole nation and endangering the life of the community[168]. Such situation must be "extraordinary", meaning that the regular measures or restrictions, allowed under the Convention to preserve public safety, health, and order, are evidently inadequate and insufficient[169]. Indeed, limitations and derogations are not the same. Some distinctions and analogies are provided as follows.

Derogations are distinct from limitations in shape and scope, as well as regarding the circumstances required to validate them. Derogations are only tolerable in extraordinary cases where States face a threat menacing the life of the nation. On the contrary, States may limit human rights even in normal times, although for constrained and exhaustive reasons. Limitations are a necessary and usual part of the human rights treaty law, since without them there would be an unfeasible arrangement of absolute rights of each human being. Therefore, when relying on derogations is objectionable and can only be done in special situations, reasonable limitations are a segment of the complex human rights system allowing countries to adjust various conflicts of interest within their borders. To some extent, States are generally required to exhaust all options under limitation clauses making recourse to emergency measures. Sometimes limitations and derogations may be similar, and thus clear distinctions are difficult to find. For instance, limitations grounded on national security may be parallel to derogations applied in a public emergency

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[167] General Comment of the UN Human Rights Committee, 31 August 2001, CCPR/C/21/Rev.1/Add.11, *CCPR General Comment No. 29: Article 4: Derogations during a State of Emergency*, para 5; Resolution E/CN.4/1985/4, para. 39.

[168] SPADARO (2020: 321).

[169] Report of the Sub-Commission of the European Commission of Human Rights of the Council of Europe, 31 May 1968, D2520306.2/31, *The Greek Case, Application(s) No.3321/67 - DENMARK v. GREECE, No.3322/67 - NORWAY v. GREECE, No. 3323/67 - SWEDEN v . GREECE, No.3344/67 - NETHERLANDS v. GREECE*, para. 113.

threating the life of the nation. Subject to assessment, limitations can be resorted to over extended periods of time, while derogations are deliberated to have only a temporary application, firmly related to the exceptional situation. Nevertheless, this does not mean that States regularly derogate from human rights for a short time only. In fact, "States have derogated from human rights over long periods of time referring to the perceived or real existence of an emergency which 'threatens the life of the nation"[170]. There are other differences about the procedures by which limitations and derogations can be realised. Limitations must be determined by law, which is not explicitly envisioned for momentary derogations[171]. Derogations, on the other hand, must be formally decreed as well as reported to other State parties of relevant agreements. There is also a difference in the amount and character of rights exposed to limitations and derogations. As respects the ICCPR, limitation clauses only concern specific rights, while the derogation clause affects, in theory, all rights that are not non-derogable[172].

Nevertheless, there are also some analogies between derogations and limitations: the principle of proportionality (which will be discussed later in this chapter) entails that every limitation or derogation should be associated to the aim chased by the limitation, or to the severity of the emergency menacing the life of the nation[173]. In this framework, it is worth noting that the principle of proportionality for limitations and derogations guarantees that, in practice, neither limitations nor derogations let States disrespect their human rights obligations. Finally, as far as the ECHR is concerned, the margin of appreciation doctrine works for both limitations and derogations, allowing States to have a certain discretion in the implementation of the ECHR, including their limitations and derogation clauses, reviewed by the ECtHR. This doctrine assumes that the organs of member States to the ECHR hold a better understanding of all aspects of precise situations within their country, and usually make their decisions in good faith in conformity with the ECHR[174].

2.5.4 Limitations and derogations against COVID-19

In the light of the current pandemic, limitations and derogations should be considered as interconnected. In this manner, States could recourse to the latter only as a last resort, when limitations have demonstrated to be an unsatisfactory answer to a public emergency[175]. However, when dealing with the response to natural disasters, States may use derogations (even when limitations would make for it) when they are not confident about whether the

[170] MÜLLER (2009: 565).
[171] DZEHTSIAROU (2020: 365).
[172] MÜLLER (2009: 565).
[173] *Ibid.*
[174] FABBRINI (2015: 15).
[175] GIACCA (2014: 100).

measures taken may be in violation of their human rights obligations[176]. For this reason, if broad limitations on public health basis were adequate but derogations still preferred, the risk of emergency power abuse suspending human rights may be another issue. It should be emphasised that derogations are in the purview of States during public emergencies endangering the life of a nation, and a pandemic, as COVID-19, could definitely be considered as such. Nor should it be presumed that a State derogating from its obligations necessarily infringes human rights of the individuals under its territory, whilst States merely limiting human rights on public health basis do not.
One may be now claim that derogations are the most suitable instrument to promptly deal with circumstances of emergency when time puts pressure on governments and actions must be taken rapidly. Although in a different situation, the UN Special Rapporteur on the promotion and protection of human rights and fundamental freedoms has underlined that:

> "Derogation constitutes a treaty obligation for States parties to international human rights treaties when States exercise emergency powers. Specifically, derogation applies when […] laws enable the use of emergency powers and/or function as a form of de facto emergency that substantially affects the full enjoyment of human rights"[177].

Moreover, failure to derogate has been considered "a serious and emerging practice that must be addressed in order to ensure legal oversight of emergency powers"[178]. Perhaps for this reason, from the beginning of the COVID-19 pandemic, only a minority of States have resorted to the option of derogating from some of their obligations under the ICCPR and the ECHR[179]. In certain cases, the lack of a derogation could indicate that the government deems the situation, even if extraordinary, to be manageable purely by limiting human rights for public health reasons. In others, it could be a tell-tale attempt made to withdraw the measures implemented from the assessment of the international community[180].
So, independently from the form they take, limitations and derogations result in interfering with fundamental human rights and thus they should be regarded carefully, if not suspiciously. Also, they should be limited, in time and space, to what is necessary to tackle the alleged emergency (i.e., the COVID-19 pandemic).
With no doubt the publicity of the restrictions themselves is important, whether they are implemented via limitations or derogations, to avert unfair readings and implementations of the law and to guarantee that individuals are

[176] SOMMARIO (2018: 113).
[177] Report of the Human Rights Council, 1 March 2018, A/HRC/37/52, *on the promotion and protection of human rights and fundamental freedoms while countering terrorism on the human rights challenge of states of emergency in the context of countering terrorism*, para. 22.
[178] Report A/HRC/37/52, para. 27.
[179] SPADARO (2020: 322).
[180] MORI (2020: 14).

accurately notified. In this regard, it is worth remarking that two rights, even if not declined as 'absolute', should neither be restricted nor suspended as part of the measures to tackle the COVID-19 pandemic: the right to information and the right to freedom of expression. The WHO has emphasised the relevance of the public's right to information in order to manage the pandemic, as it makes the population aware of the health risks of COVID-19 and of the policies to moderate them[181]. In the present framework, the right to information may also be interpreted to cover the transmission of reliable and complete data about the number of cases and deaths due to COVID-19. Significantly, the protection of the right to information and the right to freedom of expression also permits to check the legitimacy, necessity and proportionality of the restrictive measures taken by the government in relation to their effect on human rights. Whatever tool governments select to momentarily constrain the enjoyment of some fundamental rights, the free and democratic supervision of the measures taken, at the national and international level, is indispensable to ensure that the practice of emergency powers will not be normalised for the future and that rights subjected to constraints will re-expand to their original extent when the emergency is over.

2.5.5 Judicial control on limitations and derogations

To avoid that the option of suspending human rights will convert into a standardised response for future crises (i.e., subsumption), States should agree on a strategy to address the pandemic in the long run which does not depend on the persistent restriction of fundamental freedoms, as the last chapter will suggest. To this purpose, the role of national and international courts is decisive for the respect of human rights during the COVID-19 pandemic. In terms of judicial control, the impacts of either limitations or derogations resemble, but it is evident that they should not be considered as the same. On the one hand, when human rights are limited, appeals filed by individuals who complain about the restraints can be assessed according to common and shared principles (i.e., legality, necessity, and proportionality) and their reasonable purpose[182]. On the other hand, in the case of derogations, a domestic court (or the involved treaty body) would first need to investigate whether the circumstances for a derogation were encountered, and, if not, find a breach of the human rights at stake. If the derogation appears to be acceptable, the domestic court (or treaty body) would consider whether the actions conformed with other relevant rules of international law and were strictly required by the pressures of the situation[183]. By contrast, if this is not the case, the State would

[181] Interim guidance of the World Health Organization, 7 March 2020, WHO/COVID-19/Community_Transmission/2020.1, *Responding to community spread of COVID-19*, pp. 2-4.
[182] DOSWALD-BECK (2011: 318).
[183] DOSWALD-BECK (2011: 79-90).

have infringed the human rights involved in the derogation[184]. On either side, courts generally show respect to the evaluation made by the State as regards to the necessity of meddling with human rights (i.e., allow States for a certain margin of appreciation)[185]. However, future foreseeable courts' ruling about the measures taken during the COVID-19 pandemic may need to recourse to public health authorities to evaluate whether those measures were logically inevitable under international human rights law. For example, limitations and derogations' consistency may be appraised considering whether the WHO recommended States to implement a combined method to confront the COVID-19 pandemic or not. This would involve not only public health measures imposing social distancing but also the monitoring and reporting of cases through tests and contact tracing, aimed at recognising the transmission of infections and thus enforcing isolation on sick individuals. Together with limitations on freedom of movement (i.e., lockdown), some countries, especially in the East, have adopted measures which could easily track the disease (e.g., smart applications and mobile data)[186]. Those actions proved to be effective in curtailing the rate of deaths due to COVID-19[187] but have raised several other concerns about the potential violations of further rights. However, if a State, on its available resources, can implement a combined system showing a better response to the pandemic, through less severe restrictions on the enjoyment of fundamental human rights, the evaluation on the limitations or derogations should be regulated consequently, according to shared principles enshrined in international human rights law and its legal practice.

2.6 The principles behind the actions

Notwithstanding the extraordinary situation due to the COVID-19 outbreak, the fundamental values, principles, and freedoms cherished in the EU legislation, such as the ECHR[188], have been a lighthouse for States' intervention[189]. In fact, from the beginning of the pandemic, governments' measures, albeit restrictive for the enjoyment of rights, have been undertaken in adherence to shared principles of international human rights law. To understand the principles (and responsibilities) behind States' actions, it is

[184] DOSWALD-BECK (2011: 78).
[185] CONFORTI, FOCARELLI (2016: 422).
[186] DUDDEN, MARKS (2020).
[187] *Ibid.*
[188] By laying down Article 6 of the 2007 Treaty on European Union (TEU), Member States have not only recognised the rights, freedoms, and principles set out in the Charter of Fundamental Rights of the European Union of 7 December 2000 (Art. 6.1 TEU), but they have also made fundamental rights, as guaranteed by the European Convention for the Protection of Human Rights and Fundamental Freedoms, part of the general principles of the Union's law (Art. 6.3), hereby incorporating the Convention into the *acquis communautaire* of the EU.
[189] EUROPEAN LAW INSTITUTE (2020: 2).

hereby necessary to identify and discuss some of these international principles being applied to the decision-making, the development, the implementation, and the monitoring of the COVID-19 response.

2.6.1 Recommended standards

There has been a variety of recommendations relative to human rights at global, regional, and national levels aimed at leading States toward action[190]. Firstly, at a global level, the UN Treaty bodies have all forwarded guidance on the pandemic within their areas of proficiency[191]. Along with the UN Special Rapporteurs, working groups and specialists, the Human Rights Council's Special Procedures, have death with civil, cultural, economic, political, and social human rights[192]. Secondly, intergovernmental bodies, on their behalf, have provided some set of resources at regional level, as the Council of Europe's toolkit for member States[193]. Finally, national human rights institutions ('NHRIs'), having some quasi-judicial functions on both human rights and other issues, have evaluated individual complaints, referred cases to courts, and been implicated in settlement of disputes and negotiations[194]. On the one hand, the general idea emerging from national and international declarations is the requirement of positive actions undertaking efficient measures against the pandemic. On the other hand, the need to appeal to some fundamental principles grounded upon universal standards and the rule of law. While states of emergency or similar regimes may allow for a flexible and effective reaction to crises, assuming the executive body as the most significant decision-maker may inadvertently affect the function of regular checks and balances. Shifting the representative bodies and minor organisations to the background, by suspending or partially restricting their normal tasks due to extenuating circumstances, may elicit vagueness of responsibilities and duties. Thus, the risk of damaging, albeit unintentionally, fundamental rights, democracy, and the rule of law looks high. Hence the need to recall and embrace a common framework defining the position of public (and private) authorities for the current pandemic.

From the beginning, explicit references to the boundary-principles of legality, proportionality, necessity, and timeliness have been widely made to justify States' actions. The CoE was one of the first international organisations to refer to such principles, issuing a statement to which governments should abide by throughout the entire response to the COVID-19 pandemic[195].

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[190] DE CAMPOS (2020: 212).
[191] SAUNDERS (2020: 10).
[192] *Ibid.*
[193] Information document of the Council of Europe, 7 April 2020, SG/Inf(2020)11, *Respecting democracy, rule of law and human rights in the framework of the COVID-19 sanitary crisis - A toolkit for member states*.
[194] *Ibid.*
[195] *Ibid.*

Likewise, according to the Committee on Legal Affairs and Human Rights ('AS/Jur'), States must ensure that all measures restricting human rights in response to a public health emergency are lawful, necessary, proportionate, and non-discriminatory, and that they fully respect the principles applicable to states of emergency[196]. Subsequently, other relevant documentations, published by relevant independent non-profit organisations, have reiterated the possibility for States to legitimately restrict certain principles or freedoms, again, by means of extraordinary measures. In particular, in the case of human life and health, the European Law Institute ('ELI') has asserted that:

> "States may legitimately restrict particular fundamental principles or freedoms by way of exceptional measures in order to protect human life and health, on condition that such measures are limited to what is strictly necessary and proportionate, are temporary solely for the duration of the crisis and its immediate aftermath and subject to regular scrutiny by Parliaments and the courts"[197].

What is demanded by international law is thus the respect of specific criteria establishing core principles guiding States' actions. Still, the evolution of the outbreak of a serious infection has had consequences at both the level of individuals (i.e., severe injury and mortality) and collectives (i.e., risk of health system collapse and essential goods shortage). The situation of danger and serious threat to the integrity of human beings and public health has justified isolation and confinement measures, intended to reduce the spread of the disease. But according to which principles?

2.6.2 Necessity

In general, all the decisions having wide social repercussions have been based on the principle of necessity, which seeks to preserve what is deemed to be worth it: human life and the survival of all, in this case. Necessity is a rule of customary international law ('CIL'). As expressed in Article 25 of the International Law Commission's Draft Articles on Responsibility of States for Internationally Wrongful Acts:

> "1. Necessity may not be invoked by a State as a ground for precluding the wrongfulness of an act not in conformity with an international obligation of that State unless the act:
> (a) is the only way for the State to safeguard an essential interest against a grave and imminent peril; and
> (b) does not seriously impair an essential interest of the State or States towards which the obligation exists, or of the international community as a whole.

[196] Report of the Committee on Legal Affairs and Human Rights, 16 September 2020, No. 15139, *The impact of the Covid-19 pandemic on human rights and the rule of law*, para. 12.
[197] EUROPEAN LAW INSTITUTE (2020: 2).

> 2. In any case, necessity may not be invoked by a State as a ground for precluding wrongfulness if:
> (a) the international obligation in question excludes the possibility of invoking necessity; or
> (b) the State has contributed to the situation of necessity"[198].

Put differently, it seems that the law considers necessity a default ruling.
In the current situation, "necessity" replaces what is ensured by other principles, namely the citizens' autonomy and privacy, as chapter four will illustrate. Achieving collective goals in a condition of public health emergency entails a professional and scientific evaluation of its benefit and social outcomes. For instance, the compulsory quarantine of infected patients at home leading to the disclosure of their identity (e.g., to law enforcement authorities), has directly affected their right to privacy. However, this seems ethically and socially justified, according to the principle of necessity (combined, of course, with the criteria of timeliness, proportionality, and adequacy), since choices produce the least breach of individual rights and the highest moral obligation[199].

2.6.3 Time-boundedness

In April 2020, the WHO published its considerations for implementing and adjusting public health and social measures ('PHSM') in the context of COVID-19. According to PHSM, "measures should be time-bound and regularly re-assessed, at least every two weeks, along with the situational level"[200], where:

> "Situational Level 0 corresponds to a situation with no known transmission of SARS-CoV-2 in the preceding 28 days. The health system and public health authorities are ready to respond, but there should be no restrictions on daily activities.
> Situational Level 1 is a situation where basic measures are in place to prevent transmission; or if cases are already present, the epidemic is being controlled through effective measures around the cases or clusters of cases, with limited and transient localized disruption to social and economic life.
> Situational Level 2 represents a situation with low community incidence or a risk of community transmission beyond clusters. Additional measures may be required to control transmission; however, disruptions to social and economic activities can still be limited.
> Situational Level 3 is a situation of community transmission with limited additional capacity to respond and a risk of health services becoming overwhelmed. A larger combination of measures may need to be put in place to limit transmission, manage cases, and ensure epidemic control.

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[198] Resolution A/RES/56/83, Art. 25.
[199] CONSELHO NACIONAL DE ÉTICA PARA AS CIÊNCIAS DA VIDA (2020: 4)
[200] Interim guidance of the World Health Organization, 4 November 2020, WHO/2019-nCoV/Adjusting_PH_measures/2020.2, *Considerations for implementing and adjusting public health and social measures in the context of COVID-19*, p. 4.

> Situational Level 4 corresponds to an uncontrolled epidemic with limited or no additional health system response capacity available, thus requiring extensive measures to avoid overwhelming of health services and substantial excess morbidity and mortality"[201].

Even though the specific situation level may vary from one country to another, the extent of a certain measure must always fulfil the principle of time-boundedness (i.e., having a deadline) in order to verify that States' actions do not stir up further violations of human rights.

2.6.4 Precaution

Another important aspect of the current pandemic are the natural uncertainties caused by the lack of knowledge about the biology of the contagious agent and its conduct in the long run[202]. The precautionary principle, recognised by the European Union law, advises public authorities to take appropriate measures to avert risks in public health, security, and environment[203]. The 2000 Communication of the Commission of the European Communities provides a detailed and thorough list of criteria that must be met by each precautionary measure, asserting that such measures should be:

> "*Proportional* to the chosen level of protection, *non-discriminatory* in their application, *consistent* with similar measures already taken, *based on an examination of the potential benefits and costs* of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis), *subject to review*, in the light of new scientific data, and *capable of assigning responsibility* for producing the scientific evidence necessary for a more comprehensive risk assessment (emphasis added)"[204].

Indeed, the COVID-19 disease has required a strategy of preventing, monitoring, and considering reasonable actions with a careful assessment of the accessible epidemiologic information and its effects. Precautionary measures have been thus "clear, transparent and, if possible, include citizens in their construction"[205].

2.6.5 Proportionality

As reiterated several times, health measures to contain the progression of the pandemic must also be proportionate between the dimension of the imposed action (e.g., stay at home) and its effects (e.g., avoiding the infection). The purpose of the so-called proportionality principle dates to the Aristotelian

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[201] WHO/2019-nCoV/Adjusting_PH_measures/2020.2, pp. 2-3.
[202] *Ibid.*
[203] *Ibid.*
[204] Communication of the Commission of the European Communities, 2 February 2000, COM(2000)1 final, *on the precautionary principle*, para. 6, p. 3.
[205] WHO/2019-nCoV/Adjusting_PH_measures/2020.2, p. 5.

virtue of prudence, which seeks to differentiate the 'good' from what is 'right' in an action to preserve personal dignity[206]. The fact that there is no scientific evidence in situations of pandemic risk makes it difficult to delineate the proportionality of some measures. What seems evident, though, is that proportionality entails any restricting measure to be "adequate, least intrusive, and proportionate in the strict sense"[207]. Firstly, "adequacy" is verified if the restricting measure is appropriate to achieve the legal aim. The lockdown, as the restricting measure, accomplishes the protection of public health, as the legal aim, since it limits the interaction of people and thus the spread of respiratory drops from one person to another, resulting in limiting the spread COVID-19. "The lockdown ultimately aims to flatten the curve by keeping the factor of new infections around 1.0 in order to avoid over congestion of hospitals as a temporary measure"[208]. Secondly, "least intrusiveness" is met if the interfering measure is "the least intrusive yet equally effective measures amongst all available ones to achieve the legitimate aim"[209]. If the lockdown is the least intrusive measure to safeguard public health depends on its form, namely full lockdown, or partial lockdown (i.e., limiting people movement in terms of time or in terms of possibility to leave the house). Considering that the virus is transmitted via droplets, alternatives have included compulsory face masks or, as happened in Korea, regular mass rapid tests[210]. Finally, proportionate *stricto sensu* involves the actual balancing with other conflicting rights and the public interest[211]. While the lockdown aims to protect the public interest, the closure of millions of businesses has drastically affected the income situation of several national economies[212]. Countries with strong financial systems, like Germany, may partially absorb these losses in the long run but most countries cannot. Moreover, in times of a lockdown, access to education is conducted online and thus only guaranteed for those who have internet access and technical equipment. Not to mention increased stress levels at home due to consolidating work and family obligations, leading to a rise of domestic violence during COVID-19[213], affecting victims' individual right to health and life. Proportionality requires thus a compromise between other conflicting rights and public interests. Achieving the lawful aim must be important enough to justify the harm which is eventually produced on individual and public rights by the restricting measure.

[206] ENGLE (2009: 2-5).
[207] SALEM (2020).
[208] *Ibid.*
[209] *Ibid.*
[210] DUDDEN, MASKS (2020).
[211] SALEM (2020).
[212] *Ibid.*
[213] EVANS, MARGO LINDAUER, FARRELL (2020: 2302-2304).

2.6.6 Transparency

Another important assumption behind States' actions concerns the communication of decisions. Following the principle of transparency, information must be disclosed concisely and sufficiently, directed to precise objectives, in a clear and transparent manner, and communicated at the appropriate time. To this regard, the WHO has stated that:

> "To build trust, *communicators must be transparent* about how WHO analyses data and how it makes recommendations and policies. Messages also need to acknowledge uncertainty and quickly address any misconceptions or errors. Communicators must *rapidly and publicly* report the participants, processes and conclusions […]. *Transparency of all communications is essential to ensure the credibility and trust* of WHO information, advice and guidance (emphasis added)"[214].

This way, citizens better recognise the rationale behind (apparent) improper decisions. The principle of transparency is thus key to shape citizens' confidence, permitting the acceptance of restrictions on individual autonomy (e.g., quarantine) and the awareness of certain individual behaviours (e.g., hand hygiene, social distancing).

2.6.7 Solidarity

Having COVID-19 a global dimension, it is worth it mentioning the principle of solidarity. As a principle of justice, solidarity has the objective of protecting the human dignity of every human life, in the reality of our interconnection and mutual vulnerabilities[215]. Article 28 of the UDHR stipulates that "everyone is entitled to a social and international order in which the rights and freedoms […] can be fully realized"[216]. Along the same line, the Human Rights Council reaffirms that:

> "International solidarity is not limited to international assistance and cooperation, aid, charity or humanitarian assistance; it is a broader concept and principle that includes *sustainability in international relations*, especially international economic relations, the peaceful coexistence of all members of the international community, equal partnerships and the equitable sharing of benefits and burdens"[217].

While scrutinising the right to international solidarity, it seems that it does not impose extra obligations on States, but it surely requires them to take steps towards the fulfilment of human rights through prevention and removal of asymmetries between and within States, as well as the obstacles generating

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[214] WORLD HEALTH ORGANIZATION (2017: 19).
[215] DE CAMPOS (2020: 212).
[216] Resolution A/RES/217(III), Art. 28.
[217] Report of the UN Human Rights Council, 5 July 2010, A/HRC/15/32, *on Human Rights and International Solidarity*, para. 58.

and perpetuating poverty and inequality[218]. Hence, solidarity entails, in the reality of global health justice, a mutual commitment among all global health institutions, to defend the good of every human being in every community. In understanding the individual value, the principle of solidarity underlines the need to assist those whose life and dignity are most at risk (i.e., vulnerable groups). In fact, the rationale behind solidarity is that when the individual is not able to take care of himself, other actors will be called upon to help[219]. In the light of the COVID-19 pandemic, it is thus essential to call for international solidarity and for countries' cooperative efforts in sharing scientific information, delivering medical equipment, or advancing scientific progress are of recognised ethical value.

2.7 States' due diligence

All the principles outlined above may be incorporated in what is defined as due diligence, "the expression usually employed to designate a standard of conduct measuring whether a State has employed its best efforts to address certain risks, threats or harms"[220]. In short, it is a model of good authority, which evaluates whether a State has done what was required when reacting to a damage or threat. This criterion is inherent to a series of norms of conventional and customary international law generally applied to State relations or specifically to areas such as environment, human rights, international humanitarian law, and, most notably, global public health[221]. These rules and principles usually require obligations for States to prevent, stop, or compensate several internal or transboundary harms[222]. But some are combined with procedural obligations, such as risk assessments and information-sharing[223]. Significantly, due diligence may vary according to States' financial, human, and technical resources, as well as the severity of the situation. In particular:

> "The higher the risk of a certain harm and the graver the potential impact of the related situation, the greater is the effort required of States to prevent, mitigate or stop it from occurring. But *lack of capacity is no excuse*, as States must have in place the minimal governmental infrastructure enabling them to prevent, halt and/or redress harms when required (emphasis added)"[224].

Since COVID-19 has outlined the differences in each State' response to the outbreak of the pandemic, due diligence should be considered more as a principle guiding States' actions than an actual legal condition for the lawful

[218] *Ibid.*
[219] DE CAMPOS (2020: 213-214).
[220] COCO, DIAS (2020: 1).
[221] MCDONALD (2019: 1050).
[222] MCDONALD (2019: 1043-1049).
[223] *Ibid.*
[224] COCO, DIAS (2020: 3).

adoption of States' restrictive measures. It has been determined that any provision that a government implements to fulfil its due diligence duties must be consistent with international human rights law and other international norms[225]. So, it seems useful to ponder its implications as a standard of reference if the international community aims at assessing States' efforts to fulfil human rights obligations.

2.8 Principles are 'beginnings'

Having exposed the general legal framework, it seems now reasonable to state that, despite their scope and extent, at least in the EU, States' actions undertaken to tackle the spread of SARS-CoV-2, including limitations on personal freedoms, have not necessarily violated their human rights obligations as enshrined in IHRL. As described throughout this chapter, international treaties and conventions, as well as general principles and standards, allow States to impose a range of restrictions on human rights if it is meant to balance between individual and public interests, especially as regards the protection of public health and safety. In the context of present events, shaping the prospect of States' interferences with human rights in the future, it is of utter importance to recalibrate not only the impression that we have about the principles behind States' actions, but also the perception of the dynamism of IHRL, which evidently needs to be reinterpreted each time a public emergency occur as long as the global community will not lay down a specific 'emergency treaty' (i.e., an international pandemic treaty)[226]. To put it in another words, it is necessary to understand that general principles are, per definition, 'beginnings'. We should, thus, recognise that there are some circumstances under which the legal practice must accept an eventual step back to have the chance to move forward, as the last chapter will elucidate.

[225] General Comment of the UN Committee on Economic, Social and Cultural Rights, 14 December 1990, E/1991/23, *No. 3: The Nature of States Parties' Obligations (Art. 2, Para 1, of the Covenant)*, para. 9.
[226] See Chapter V of this work.

Chapter III
Recalibrating human rights during emergencies

The serious threat posed to people's survival and livelihood brought by COVID-19 reveals how a virulent disease can affect all segments of society, being more than a simple matter of health. Apart from triggering severe job loss and a multi-pronged economic crisis, the pandemic has unveiled States' structural flaws in healthcare and general public services, as well as their deficiency in social protection and preparedness[227].

From 2020, despite the challenges of resources management[228], States have managed to implement the regulations resulting from domestic and global security strategies. However, this time, the need to cope with a crisis affecting all sectors of society has led national policy makers to opt not only for the mere application of international law protocols for cross-border emergencies, but also for the implementation of artificial intelligence and machine learning. In this way, States have opened to the opportunity to balance interests, needs, and funds by introducing multi-layered plans (i.e., directed measures and undirected monitoring tools, such as smart apps). As one would expect, this multidimensional response, beyond the conventional application of laws, has raised concerns about the potential implications for users' rights. Arranged with the aim of addressing and overcoming the pandemic and avoid further breaches of individual freedoms[229], they may have ended up recalibrating their shapes. Put differently, some new technologies, albeit developed to support States in the fulfilment of their obligations towards human rights, have increased, instead of reduced, the impact of the pandemic on individuals. The opportunities that States have had to employ such new technological systems based on a 'superior knowhow' is in itself debatable. First, because of national inequalities in both availability and practice of expertise and high technology in policymaking. Second, because of single governments willingness (or unwillingness) to lean on inhuman calculations suggesting which path is the most feasible to tackle human-related issues. Third, because of individuals' opinion, often reluctant, as regards artificial intelligence-driven instruments analysing personal data and advising 'logical and optimal solutions' for their future down the line.

For this reason, identifying the boundaries to overcome the pandemic is useful to promote an agenda of sustainable security which integrates enforceability and dynamism in international human rights law. On the one hand, stating that 'security comes first' may appear as an excuse justifying the limitations of

[227] As witnessed in all public emergencies, the countries paying the highest price are also those whose conditions are already unstable and vulnerable, being least skilled to bear further jolts to their welfare.

[228] BURLACU et. al (2020: 510-512).

[229] BUDD (2020: 1183); CALVO, DETERDING, RYAN (2020:1); DAGRON, FORMAN, MEIER, SEKALALA (2020).

personal freedom during lockdowns. On the other hand, security as 'protection' could lay the groundwork for stable and inclusive societies, especially in the aftermath of the COVID-19 pandemic. By itself, security suggests an alternative outlook to stir States' reorganisation while they get prepared against urgent challenges; or when they collaborate to address global problems as international community; or also when they consider the policies applicable to respect, protect, and fulfil their human rights obligations. In the framework of a world pandemic, human security recognises that global health relies on strong disease prevention systems, as well as on the availability of, and access to, healthcare of high quality[230]. Therefore, security requires governments and civil society to acknowledge how health crises affect the economic systems, livelihoods, and the community as a whole. According to IHRL, States are entitled to foster a combination of protections and sanctions to enhance early notice and readiness, but they are also allowed to redevelop their healthcare systems, mobilising, and educating the public towards the belief that any personal behaviour eventually affects others. So, human security as a principle makes sure that people adopt a good conduct in the light of a complex situation, as the COVID-19 pandemic is. Similarly, human security now may also be the starting point to overcome future impasses, by promoting multilateral cooperation and partnerships with varied actors from governments, academia, civil society, and the private sector. The main suggestion here is thus that, when security is placed at the edge of the aims, States are more likely to (re)distribute their resources efficiently, so that people, notably the most vulnerable, are given the right opportunities.

This chapter proceeds as follows. First, it evokes security as a milestone for the current pandemic and for future responses, in order to promote a sustainable path based on protection and cooperation among States (Section 3.1). Then, it seeks to examine one of the rights directly affected by a global disease, that is, the right to health and its 'shrouded vagueness' derived from both a doctrinal debate and legal provisions (Section 3.1.2). Section 3.2.1 tries to report the meanings of the right to health in international law and European law. Notwithstanding its universal acknowledgment, resulting also in the recognition of a right to healthcare, the right to health present multiple and controversial facets in both definition and achievement. Regarding the latter, the pandemic has brought about the possibility of taking advantage of digital technologies as a strong support for clinicians and practitioners (as illustrated by Section 3.2 and Section 3.3). In the EU (Section 3.4), as in the world (Section 3.5), the medical field has definitely benefited from AI tools (e.g., smart apps). However, the use of AI and ML in healthcare, being based on 'data exchange', raises some important concerns about the scope and extent of technology-driven solutions, because of the foreseeable impacts they have on individual rights (Section 3.6). To name but a few, 'informed consent to

[230] WORLD HEALTH ORGANIZATION (2020a).

use' (Section 3.6.1), 'safety and transparency' (Section 3.6.2), and 'algorithmic fairness and biases' (Section 3.6.3).

3.1 The right to health: to which extent '*security comes first*'?

As the worldwide trend of COVID-19's seems to reduce daily, recalibrating human rights, especially during public emergencies, is necessary to assert the current consequences, as well as the forthcoming implications, that the pandemic is likely to cause in IHRL. Indeed, States have responded to the crisis in accordance with their available resources but, at the same time, they have been bounded to the adoption of the legal framework enshrined in the legal practice of international law[231]. States' responsibilities to act safe while fulfilling their globally recognised obligations, encouraged by the traditional shared principles of proportionality, legality, necessity, and time boundness, demonstrate the leading position that security has performed. But to which extent security comes first? In order to place human security at the edge of States' efforts to stop the spread of the disease, as well as to forge a sustainable path for future responses, it is firstly necessary to understand the meaning of one of the main rights directly related to the outbreak of a global disease: the right to health and, hence, the consequent right to healthcare.

3.1.2 Understanding the right to healthcare and its 'shrouded vagueness'

In modern human rights law, individual and social rights are deemed interdependent and indivisible[232]. This perspective marks the consideration of human rights, and, in particular, the right to healthcare. In order to understand the effects of such a perspective, one should depict the theoretical and practical meaning of the right to healthcare in Europe. Moreover, one should confront its (shrouded) vague character, by claiming that the right to healthcare can be and has been operationalised[233]. Although being applied in several judgements, the practice has demonstrated that the mere settlement of individual healthcare rights does not automatically signify decreasing health inequalities[234]. Henceforth, the emphasis here is mainly placed on elucidating the notion of healthcare access and the connotation of such a right in international law.

At the global level, "the enjoyment of the highest attainable standard of physical and mental health" is conceived as a fundamental right of every human being without distinction of race, religion, political belief, economic

[231] See Chapter II of this work.

[232] General Comment of the UN Committee of Economic, Social and Cultural Rights, 14 December 1990, E/1991/23, *No. 3 on the Nature of States Parties' Obligations* (*Art. 2, Para. 1 of the Covenant)*.

[233] DEN EXTER (2017: 173).

[234] *Ibid.*

or social condition[235] whereas health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[236]. This notion of the right to health has been criticised on the ground that such a right is expressed too broadly[237]. A right to be healthy (or, on the contrary, a right not to be healthy) cannot be declared[238], as happiness or love[239]. By contrast, when understood as a right to healthcare, by demanding access to healthcare, the right to health becomes a significant and effective right. More problematical is the fact that under the WHO's Constitution, health is only in part related to pre-emptive health measures and medical care services. It is sufficiently evident, in fact, that health features, such as housing and working terms, a healthy environment, education, and culture, are also relevant elements swaying individual and collective health[240]. Moreover, following the overarching definition of the concept of health, the right to health is a stratified, misleading right which would be hard to realise[241]. Therefore, understanding the right to health as "the right to health protection and healthcare" seems more practical. In this way, it would indicate both population-based essential services (e.g., immunisation and screening programmes) and individual medical care (e.g., treatment of illness). By reducing the scope of the right to health to healthcare, one easily distinguishes between the right to healthcare and other rights, such as the right to food, a healthy environment, housing, education, etc. Consequently, from a practical point of view, considering these rights separately, albeit interconnected, is helpful to the purpose of achieving the highest attainable level of health. The doctrinal debate around the right to healthcare is also element of another argument, which is healthcare intended as a right, and thus as a basis to establish obligations for States, public authorities and private individuals and businesses. The traditional academic dialogue on opposing theories of rights relies on the natural law theory versus the libertarian one[242]. Even though the debate is theoretical, its significance for healthcare resides in its interpretation. For instance, life (in the sense of 'good health') has been recognised as one of the basic conditions of human moral "self-evidently necessary for human flourishing"[243] which would be, in turn, the reason why people reunite as a

[235] Resolution of the UN General Assembly, 16 December 1966, A/RES/21/2200, *International Covenant on Economic, Social and Cultural Rights*, Art. 12.
[236] Constitution of the World Health Organization, New York City, 22 July 1946, Preamble.
[237] DEN EXTER (2017: 174).
[238] GOSTIN, LAZZARINI (1997: 230).
[239] This comparison is made because those emotional states are believed to be characterised by 'feelings' (of joy, satisfaction, contentment, and fulfilment). Since they all tend to be such broadly defined terms, psychologists and other social scientists typically use the term 'subjective well-being' to define them. Just as it sounds, subjective well-being focuses on an individual's overall personal feelings about life. Thus, personal, and easily changeable.
[240] WORLD HEALTH ORGANIZATION (2008).
[241] GOSTIN, LAZZARINI (1997: 29).
[242] HAYES (1992: 405-416); NOZIK (1974).
[243] FINNIS (2011: 23).

community[244]. From this natural theory, it has been claimed that the purpose of healthcare should be to foster human flourishing within a community, and reorganising healthcare can be satisfactory for public purposes (i.e., promoting life and good health of others)[245]. Shifting these theories to the modern understanding of rights confirms the existence of a human right to healthcare as both the access to healthcare resources and services and as a component of the common good[246]. Therefore, equality of healthcare access may require the reallocation of resources for public reasons. The theory of natural law and natural rights has thus conceptualised the right to healthcare[247]. In the 1970s, on the other hand, Robert Nozick indorsed a libertarian position, legitimising a "minarchy state"[248], which should safeguard individuals "only against violence, theft, fraud, and breach of contract"[249]. According to the author, fostering social welfare, including good health, by assisting health services and ensuring healthcare access, does not match the proposition of maximising individual liberties and property rights. Therefore, the libertarian approach does not concede a right to healthcare and any governmental engagement in healthcare (e.g., to fight public health risks) is only aimed at shielding libertarian rights (e.g., property, life, physical integrity, privacy)[250].

Nowadays, one may easily condemn this one-dimensional model of rights assuming that negative rights are likely to involve positive obligations, and vice versa[251]. Also, any breach of the right to healthcare (e.g., the denial of a ventilator as life-saving therapy) may also infringe a person's private life, which highlights that individual and social rights are interdependent and indivisible. However, the theoretical debate described above has been the academic background behind the doctrinal discussion operationalising (i.e., recognising) the right to healthcare in international law.

3.1.3 The meaning of the right to health under international and European law

Chapter two has already illustrated that IHRL has affirmed the right to health (interpreted as healthcare) as a basic right after World War II. In particular, it is found in Article 25.1 of the UDHR, which asserts that:

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[244] HAYES (1992: 412).
[245] FINNIS (2011: 210).
[246] One may consider a common good as a general interest, shared and beneficial for all or most members of a given community, or also, what is achieved by citizenship, collective action, and active participation in the realm of politics and public service.
[247] DEN EXTER (2017: 175).
[248] A minarchy or night-watchman State is a minimal model of a State whose limited functions follow the non-aggression principle (i.e., providing military, police, and courts), thereby protecting citizens from aggression, theft, breach of contract, fraud and enforcing property laws.
[249] NOZIK (1974: 26).
[250] NOZIK (1974: 149-182).
[251] General Comment E/1991/23, para. 8.

> "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including […] medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control"[252].

Adopted by the UN General Assembly in 1948, the Declaration has gradually assumed the position of international customary law[253]. As previously mentioned, the provisions included in the Declaration were soon after confirmed in ICESCR. The latter delivers, more than other international treaties, the most inclusive article on the right to health. Specifically, Article 12 ICESCR reads a list of the actions to be taken by States, involving:

> "(a) The provision for the reduction of the stillbirth-rate and of infant mortality and for the healthy development of the child;
> (b) The improvement of all aspects of environmental and industrial hygiene;
> (c) The prevention, treatment and control of epidemic, endemic, occupational and other diseases;
> (d) The creation of conditions which would assure to all medical service and medical attention in the event of sickness"[254].

Also at the regional level, the Council of Europe's European Social Charter[255] (Article 11), as well as the Biomedicine Convention[256] (Article 3), and the European Union Charter of Fundamental Rights[257] (Article 35), have conceived equal access to healthcare as a basic human right.
Notwithstanding the evidence and further definitions of the right to healthcare by international law[258], the widespread criticism about its 'shrouded vagueness' has persisted, demanding further explanation. A crucial shift clarifying the scope of such a right was the publication of the General Comment No. 14 on Health issued by the CESCR[259]. This document is now largely considered a peremptory interpretation of Article 12 of the Covenant, as it openly indicates the content of the right to healthcare with reference to

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[252] Resolution of the UN General Assembly, 10 December 1948, A/RES/217(III), *Universal Declaration of Human Rights*, Art. 25.1.
[253] DEN EXTER (2017: 176).
[254] Resolution A/RES/21/2200, Art. 12.
[255] European Social Charter, Turin, 26 February 1965.
[256] Additional Protocol to the Convention on Human Rights and Biomedicine concerning biomedical research, Strasbourg, 25 January 2005.
[257] Charter of Fundamental Rights of the European Union, Nice, 7 December 2000.
[258] Resolution of the UN General Assembly, 21 October 2015, A/RES/70/1, *Transforming our World: The 2030 Agenda for Sustainable Development*; General Comment of the UN Committee on Economic, Social and Cultural Rights, 2 July 2009, E/C.12/GC/20, *No. 20 Non-discrimination in economic, social and cultural rights*; OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS (2011).
[259] General Comment of the UN Committee on Economic Social and Cultural Rights, 11 August 2000, E/C.12/2000/4, *No. 14 on the Right to the Highest Attainable Standard of Health (Art. 12)*.

both general and specific obligations. A general obligation is, for example, established by the concept of 'progressive realisation'[260]. Certainly, the latter requires signatory States to achieve the Covenant's rights inch by inch but, at the same time, it acknowledges the obstacles that States may encounter in complying with their duties. Therefore, even if the concept of 'progressive realisation' itself imposes a direct impact (i.e., the recognition of an obligation to take steps to guarantee the enjoyment of the "highest attainable standard of physical and mental health"), the full implementation of the right to healthcare empowers countries to take necessary actions to give effect to that right in the long run. Such actions, as declared, should be "deliberate, concrete and targeted towards the full realisation of the right to health"[261]. This flexibility indicates that "States parties have a specific and continuing obligation to move as expeditiously and effectively as possible towards the full realisation of Article 12"[262]. In addition to this, the General Comment states also that:

> "There is a strong presumption that retrogressive measures taken in relation to the right to health are not permissible. If any deliberately retrogressive measures are taken, the State party has the burden of proving that they have been introduced after the most careful consideration of all alternatives and that they are duly justified by reference to the totality of the rights provided for in the Covenant in the context of the full use of the State party's maximum available resources"[263].

Combined with the non-discrimination principle[264], the progressive realisation establishes, thus, certain individual connotations in a social right. Reading the interpretation of the General Comment, retrogressive measures are assumed impermissible[265]. So, whenever they are enacted, a proper justification is expected. But what reasons can be considered as a proper justification? Can the current pandemic be an excuse? If yes, on which grounds? Social concern and economic downturn by themselves seem not enough for accepting a retrogressive measure. What is more required, possibly, is a forward-looking evaluation of the measures' effect, while considering the State's obligation to protect the totality of rights under the Covenant[266]. In other words, the proper justification is to be found in the appropriate balancing between individual rights and public interests. In practice, such an evaluation should follow at least six stages of examination. First, whether there was a conceivable reason for the action. Second, if alternatives were widely assessed. Third, whether there was open participation of affected groups in analysing the predicted measure and options. Fourth, if the measure was directly or indirectly

[260] *Ibid.*
[261] General Comment E/C.12/2000/4, para. 30.
[262] General Comment E/C.12/2000/4, para. 31.
[263] General Comment E/C.12/2000/4, para. 32.
[264] Resolution A/RES/21/2200, Art. 2.2, 3.
[265] *Ibid.*
[266] GOMEZ ISA (2015: 234-240).

discriminatory. Fifth, whether the measure will have an endured impact on the realisation of the right to healthcare (especially if an individual or group is deprived of minimum essential access to healthcare). And sixth, whether there was an autonomous understanding of the measure at the nation level (i.e., the decision was taken independently)[267]. This would signify that, whenever the conditions of a serious lack of resources are met, public spending cuts on healthcare services (e.g., limiting free access to tests) can be justified if pondered among (a) State's obligations towards the full amount of social, economic, and cultural rights, (b) the measure's non-discriminatory result, and (c) a minimum level of healthcare access granted in any case[268].

As illustrated in chapter two, the obligation to respect prevents States from refusing or limiting equal access to special groups (e.g., women, prisoners, and children). The obligation to protect requires States to take positive measures to prevent third parties (e.g., health providers) from interfering with the right to healthcare. This means that States are supposed to guarantee and monitor the availability, accessibility, adequacy, and quality of healthcare, especially when establishing market competition in the distribution of care (i.e., mass tests and vaccines supply)[269]. Finally, the obligation to fulfil requires States to advocate a national health policy with a comprehensive design to realise the right to healthcare, counting also upon regulatory and financial procedures to empower the infrastructures (i.e., public health services, professional training and education programmes, information campaigns, etc.)[270]. As mentioned, even though the Covenant admits the constraints due to inadequate available resources, it also promotes obligations having immediate effect. Therefore, although the right to healthcare is to be accomplished gradually, certain actions must be taken as soon as the signature is made. These actions should ensure an essential minimum level of the right to healthcare, encompassing (1) a national health plan, (2) the progressive realisation and non-discrimination in healthcare access, and (3) the equitable access to essential healthcare services and medicines[271].

In lawsuits concerning the violation of these core obligations, States "cannot, under any circumstances whatsoever, justify its non-compliance with the core obligations set out […], which are non-derogable"[272]. Given this, the CESCR's General Comment broadly elucidates the connotation of the right to

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[267] General Comment of the UN Committee on Economic, Social and Cultural Rights 4 February 2008, E/C.12/GC/19, *No. 19 on the right to social security (Art. 9 of the Covenant)*.

[268] General Comment of the UN Committee on Economic, Social and Cultural Rights, 21 September 2007, E/C.12.2007/1, *An evaluation of the obligation to take steps to the "maximum of available resources" under an Optional Protocol to the Covenant [on Economic, Social and Cultural Rights]*, para. 10.

[269] General Comment E/C.12/2000/4, para. 35.

[270] Regulation of the European Union, 12 February 2021, 2021/242, *establishing the Recovery and Resilience Facility*.

[271] General Comment E/C.12/2000/4, para. 35; TOBIN (2012: 243-252).

[272] General Comment E/C.12/2000/4, para. 47.

healthcare[273]. At the regional level, both the CoE's European Social Charter and the Oviedo Convention reinforce the main elements of non-discrimination and equal access to healthcare for those in need[274]. According to Article 3 of the Oviedo Convention, "Parties, taking into account health needs and available resources, shall take appropriate measures with a view to providing, within their jurisdiction, equitable access to health care of appropriate quality"[275]. Apart from unfair discrimination, the Convention tolerates preferential treatments (i.e., special triaging) only for objective reasons (i.e., inferred on medical need grounds and pondering available resources)[276]. Therefore, what matters is the 'medical need' as determined by clinicians, instead of a patient's individual desires. The Explanatory Report of the Convention's Additional Protocol on Transplantation of Organs and Tissues explains the idea of medical need should be "understood in its broadest sense, in the light of the relevant professional standards and obligations, extending to any circumstance capable of influencing the state of the patient's health, the quality […] or the outcome [of the choice] […]"[277]. Examples would be the compatibility (of organs), the medical urgency, the time, the difficulties encountered in the process and the expected result[278]. Any allocation grounded beyond the medical criteria should, thus, be judged as unlawful discrimination[279].

For what concerns the definition of healthcare benefits, even if emboldened by the basic health provisions of the ICESCR, there is no significant effort to classify or approximately define healthcare services in Article 3 of the Oviedo Convention. So, the Explanatory Report should be read interpreting healthcare as "diagnostic, preventive, therapeutic and rehabilitative interventions aimed at enhancing a person's health or alleviating suffering"[280]. Still, the methods guaranteeing access to healthcare differ by country and may take distinct

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[273] Report of the Special Rapporteur, 14 March 2006, E/CN.4/2006/41, *on adequate housing as a component of the right to an adequate standard of living, and on the right to non-discrimination in this context*; Report of the Special Rapporteur, 21 March 2006, E/CN.4/2006/48/Corr.1, *on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health*; HUNT, MACNAUGHTON (2007: 303-330).

[274] Decision on the merits of the European Committee of Human Rights, 11 September 2012, Complaint no. 67/2011, *Médecins du Monde v France*, para. 139; Resolution of the Committee of Ministers, 31 March 2010, CM/ResChS(2010)1, *on Collective complaint No. 46/2007: the European Roma Rights Centre (ERRC) v. Bulgaria*.

[275] Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine, Oviedo, 4 April 1997, Art. 3.

[276] Explanatory Report of the Council of Europe, 25 January 2005, No. 195, *to the Additional Protocol to the Convention on Human Rights and Biomedicine, concerning Biomedical Research*, paras. 25-25.

[277] Explanatory Report of the Council of Europe, 24 January 2002, No. 186, *to the Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin*, para. 37.

[278] *Ibid*.

[279] BUIJSEN, DEN EXTER (2010: 69-85).

[280] Report No. 195, para. 24.

forms. In this respect, the European social security law, listing medical benefits under the right to healthcare as a key aspect of social security, provides public authorities with an additional support[281]. In this way, the specific criteria of medical care, even if identified by individual member States, must be always in accordance with international medical norms[282]. Although IHRL contains this provision, it is the domestic law of a State (i.e., the Constitution and statutory law) which is crucial in executing the right to healthcare within national borders. As a matter of fact, in Europe, constitutional approaches to safeguard health have varied in both focus and degree[283]. Some Constitutions concentrate on specific categories (e.g., public health[284]), while others accept the right to healthcare indirectly (i.e., as part of a social security right)[285]. Also the nature of such a right tends to vary. Generally, a subject of statal policy to be realised progressively[286], thus providing protection; or an actual duty of the State to protect citizens' health more as a guaranteed right, as in Italy[287]. However, what different provisions in Europe have in common is the promotion of certain obligations for States requiring a range of statutory laws, and several other measures, to provide access to healthcare services.

In sum, protecting the right to healthcare in international and national law is necessary to strengthen such a right, especially against its potential breach during public emergencies which require extraordinary measures. Still, it needs to be rooted into specific policies which aims to deliver public health assistance and medical care of good quality available for all. To a certain degree, IHRL as described has established some precise standards about the prescriptive substance of the right to healthcare. Under the provisions enshrined in international law, State duties indicate, at least, that governments must carry "(1) a free or affordable essential COVID-19-related healthcare (i.e., COVID-19 testing, tracing, and treatment), (2) protect healthcare workers from infections through adequate and effective protective personal equipment ('PPE'), and (3) work to advance toward an effective therapy and/or vaccine"[288]. Still, the right to health suggests lessening the negative impacts of COVID-19 infections on vulnerable groups (i.e., women, children, the elderly, people with disabilities, and prisoners), and relieving the impact of wider policy answers on food, water, housing, and sanitation[289].

In the aftermath of the COVID-19 pandemic, more than monitoring and evaluating States' fulfilment of international obligations, finding functional

[281] European Code of Social Security, Rome, 6 November 1990, Art. 10.
[282] *Ibid*.
[283] DEN EXTER (2017: 182).
[284] Constitución Española, Madrid, 6 December 1978, Art. 43.
[285] Grundgesetz für die Bundesrepublik Deutschland,Berlin, 8 May 1949, Art(s). 2, 20.
[286] Grondwet voor het Koninkrijk der Nederlanden,Den Haag, 22 September 2008, Art. 22.1.
[287] Costituzione della Repubblica Italiana, Roma, 27 December 1947, Art. 32.
[288] FORMAN, KOHLER (2020: 549).
[289] FORMAN, OOMS, BROLAN (2015); FORMAN et al. (2016).

remedies to ensure the right to healthcare is clearly needed. To this end, two major challenges have been witnessed by the international community over the past year: the impact of the fulfilment of the right to health on other rights (e.g., the right to life or privacy) and the contested implementation of a vaccine to reach, at least, herd immunity[290]. In fact, since the detection of the SARS-CoV-2 virus and its genome, a great deal of effort has been made by the scientific community. The fulfilment of the right to health has resulted, more than in the limitative measures avoiding infections, in the development of several vaccine plans. Over forty are currently under clinical evaluation, ten of these are in the last phase of clinical trials and three of them have ended with positive results[291] (namely, 'Pfizer-BioNtech', 'Moderna', 'Johnson & Jonhnson's'[292]). Present data illustrate that new vaccines contribute to protect individuals and, thus, reduce the spread of pandemic while fulfilling the obligations derived from the right to healthcare. Indeed, the theoretical and scientific strategies are different, and it is believed that some vaccines will be more appropriate for certain groups of the population[293]. Due to the short development time and the innovative technologies adopted, these vaccines have been mainly criticised for the unknown future implications they may have. So, the WHO itself has provided a Vaccines-explained series[294] to recall the importance of developing vaccines with the purpose of ending life loss and serious harms on individuals, as well as avoiding hospital congestion. As outlined by the WHO, if deficient health systems keep being overburdened by COVID-19 and individuals being obliged to bear testing and treatment costs, it is very likely to observe a forthcoming general collapse of health systems, along with people being pushed further into poverty and insecurity[295].

Given this, one may assert that the 'vagueness' of the right to health is actually 'shrouded': that is, not vague at all. In other words, following the framework provided by international human rights law, States do know what such a right signifies and which obligations derive from it. What remains unclear, though, it is how States evaluate the balance between private interests and common concerns within their borders. The COVID-19 pandemic has demonstrated that countries have had a large margin of appreciation while deciding which measure to implement while addressing the spread of the virus. Undoubtedly, national governments have fulfilled their obligations, especially in the light of the right to health. But they have taken steps according to their available resources, as enshrined in the ICESCR. In some fortunate circumstances,

[290] Herd immunity, or population immunity, is a state of indirect protection from a disease occurring when a sufficient percentage of a population has become immune to an infection disease, through vaccination or previous infections, thus reducing the probability of infection for individuals who lack immunity.
[291] FORNI, MANTOVANI (2021: 626).
[292] CENTRE FOR DISEASE CONTROL AND PREVENTION (2021).
[293] FORNI, MANTOVANI (2021: 636).
[294] WORLD HEALTH ORGANIZATION (2021).
[295] *Ibid*.

countries have also had the opportunity to combine practical limitations (i.e., lockdowns) and traditional medical treatments with some new public health tools which take advantage of high digital technologies. To name but a few, global placing systems, cell phone apps, and facial identification have all been developed to monitor the spread of SARS-CoV-2 with the purpose of providing additional support to conventional healthcare. But, as one may expect, even if motivated by the good intention of addressing a huge problem, many times humans' solutions eventually end up raising other concerns.

3.2 Digital technologies and the reorganisation of the medical field

> "It is said that artificial intelligence will deliver major improvements in quality and safety of patient care at reduced costs, with some observers even suggesting it represents an imminent revolution in clinical practice. Yet we are very early in the evidence cycle and it is unclear how true such predictions will prove to be.
> Clinicians, researchers, policy specialists and funding organisations are aware that something important may be emerging, but they have few tools for appraising the potential of AI to improve services.
>
> Prof John Fox, Chairman,
> OpenClinical CIC, Chief Scientific Officer, Deontics Ltd"[296].

Concerns about the appraisal of certain States' limitative measures, as well as their applicability as a response to the pandemic, have been accompanied by the technical problems of producing and delivering healthcare services (e.g., billions of vaccine doses). Therefore, policy makers have been led to combine the restrictions on personal freedoms as early described with some innovative tools which leverage high technology. Professionally called Artificial Intelligence ('AI') and Machine Learning ('ML'), such innovative tools have been largely implemented as supportive mechanisms monitoring, and somewhere reducing[297], the spread of COVID-19. Nevertheless, computer-based evaluations in healthcare tend to raise doubts not only about the employment of digital technology as such, but also about the reorganisation of the medical field those innovations could provoke, especially including their potential interference with the fulfilment of the right to health and other important personal freedoms.

With the general automation brought about by the industrial revolution, it is hard to find a field that has not been affected by the advent of data-driven technology. Hence, one may not be aware that artificial intelligence had already been carried out in healthcare before the COVID-19 outbreak. However, AI and ML applied in the medical field was believed to help clinicians performing their job and, therefore, not particularly affecting the

[296] ACADEMY OF ROYAL MEDIC COLLEGES (2019: 7).
[297] BANA, CHRISTOU, SACCO (2020); RYAN (2020).

individual rights of the patient. For instance, Google's DeepMind[298], had begun with the analysis of anonymised eye scans searching for early signs of diseases causing blindness. Then, it has developed an app, Streams, able to send alerts to doctors about patients at risk of acute injury[299], thus processing human health-related duties. Certainly, differently from ordinary applications of AI in healthcare, the pandemic has unveiled the consequences that new digital tools (e.g., smart apps) have had for the medical field (i.e., patients' data sharing to third parties) and, eventually, for human rights. And just as some believe AI is going to offer immediate relief to many of the challenges faced by healthcare systems, others claim AI is "little more than snake oil and can never replace human-delivered care"[300]. As a Harvard professor of Engineering and Applied Sciences[301] has stated: "You're not expecting this AI doctor that's going to cure all ills but rather AI that provides support so better decisions can be made"[302]. In fact, it is not easy to imagine how the assessment of patients' behaviours and reactions, as well as their 'physical check-up', can be performed by other than humans. Still, it seems quite evident that AI can provide a valid support to health services, remarkably when States lack the capability to quickly address several issues at the same time, as extraordinary situations of public emergencies.

3.3 The potential of artificial intelligence in healthcare

> "By any measure, Artificial Intelligence – the use of intelligent machines to work and react like humans – is already part of our daily lives. Facial recognition at passport control and voice recognition on virtual assistants such as Alexa and Siri are already with us. Driverless cars or 'companion' robots that 'care' for the elderly are undergoing trials and most commentators say will be commonplace soon"[303].

In 2020, failure of traditional health systems to counteract massive disruption caused by COVID-19 has accentuated the need to fine-tune new methods to control and manage the spread of diseases. Such a need has been particularly relevant for scarce-resource settings[304], where a quick response to critical demands was clearly necessary to avoid further complications which could

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[298] DeepMind Technologies is a British artificial intelligence subsidiary of Alphabet Inc. founded in September 2010. In July 2016, a collaboration between DeepMind and Moorfields Eye Hospital started to foster AI applications for healthcare.
[299] EVENSTAD (2018).
[300] ACADEMY OF ROYAL MEDICAL COLLEGES (2019: 3).
[301] Finale Doshi-Velez is a John L. Loeb associate professor in Computer Science at the Harvard Paulson School of Engineering and Applied Sciences. She completed her MSc from the University of Cambridge as a Marshall Scholar, her PhD from MIT, and her postdoc at Harvard Medical School. Her interests lie at the intersection of machine learning, healthcare, and interpretability.
[302] POWELL (2020).
[303] ACADEMY OF ROYAL MEDICAL COLLEGES (2019: 3).
[304] SIOW et al. (2020: 1-5).

result in further breaches on human rights. Therefore, the practice of 'strumentalising' tools which can provide fast answers (i.e., AI) to urgent problems (i.e., the spread of the pandemic). Analytically, artificial intelligence has been defined as the study of 'intelligent agents', which are devices that "perceive their environment and take actions to maximise their chance of success at some goal"[305]. A subcategory of AI, also commonly used, is ML, whose name derives from the fact that it "learns from testing and fault basis and enhances its current and future performance on the results"[306]. Undeniably, the latter has given promising solutions to adjust procedures and allocate resources, by employing new versatile data and methods in the previous practices[307]. In particular, deep learning, a division of ML, with the manipulation of neural networks (i.e., programming paradigms), seems to easily optimise health care research. So, it could be successfully applicable – especially for the current crisis where time is of the essence[308].

In order for ML to work properly in healthcare, as well as in any other human rights-related fields, clinical data, epidemiological data, and genetic data must be aggregated and processed jointly because only the 'sharing of data' would attain feasible prevention, diagnosis, and management of diseases[309]. And, therefore, making it possible to suggest which 'interest' should prevail and, preferably, which public health measures to apply. Indeed, that is another deficiency unveiled by the COVID-19 outbreak, which has manifestly put enormous tension on authorities to collect clinical, epidemiological, and public health data on coronavirus, and consequently translate them into timely actions to handle its spread. Particularly, aiming at having a minimum interference on the economy and on individuals' lives.

Technology-driven tools may collect and process such data effortlessly, and perhaps better than humans[310]. For instance, real-time data communication via dynamic dashboards, by giving insights on the spread of SARS-CoV-2, have supported authorities to take actions to protect their communities[311]. Likewise, ML algorithms have been run for the screening of COVID-19 through a detection system that proved to be highly sensitive and speedier when compared to manual registration[312]. Moreover, AI has been integrated into operating clinical assessments that test for the efficiency of treatments against SARS-CoV-2[313].

In sum, for this rapidly spreading disease, AI has proved to make medical treatments more effective (i.e., increasing the speed and precision of cases-

[305] POOLE, MACKWORTH, GOEBEL (1998: 11).
[306] *Ibid*.
[307] BINI (2018: 2358).
[308] NASEEM, AKHUND, ARSHAD, IBRAHIM (2020: 2).
[309] LIANG, TSUI, NI et al. (2019 : 434).
[310] SANTOSH (2020: 2-5).
[311] NASEEM, AKHUND, ARSHAD, IBRAHIM (2020: 2).
[312] KAMEL BOULOS, GERAGHTY (2020: 8).
[313] GE, TIAN, HUANG et al. (2020: 498-403).

identification). Thus, accurate and feasible trials for COVID-19 diagnosis are challenges that could be surmounted by applying AI technology, also in resource-limited and inadequate health settings[314]. But, considering that conventional AI-tools may not deliver optimum results if a smaller amount of data is accessible, cross-country AI-based models should be promoted. In this way, the 'exchange of data' could make automatic detection of COVID-19, as well as other diseases, more accurate in one country and in the others accordingly. But what data can be communicated without affecting human rights of individuals 'in treatment'? If one expects the future of healthcare to rely on AI-based tools, one should also investigate the possible consequences of harnessing the great potential of AI. Overall, it is of utmost importance to contemplate the role that ethics and law perform in the perspective of artificial intelligence-driven healthcare.

3.4 AI-driven healthcare in the EU

Due to its incredible expansion in the recent years, AI is likely to become a potential mechanism to implement for the fulfilment of many duties in several fields, even including individual rights. As previously described, AI has already been carried out in healthcare. Now, it is necessary to address the implications for the directly affected right to health and, ultimately, for other rights. The former chapter has explained that dealing with personal freedoms entails the compliance with specific obligations, for both public authorities and private individuals or businesses. For this reason, placing AI in a specific legal framework is essential, as it is considering trends and strategies in Europe, on which this study is mainly focused[315].

By issuing the Communication COM(2018)237 in April 2018[316], the European Commission has launched a regional project on AI that aims to ensure a suitable ethical and legal framework for it[317]. For example, it has promoted the establishment of a European AI Alliance and the dissemination of the 'Ethics guidelines for Trustworthy Artificial Intelligence', published in April 2019. The Guidelines lay down a set of 7 key requirements that AI systems should meet to be deemed reliable and trustworthy. In particular:

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[314] TING et al. (2020 : 460).

[315] Compared to Europe, the US has a broader legal framework declaring the scope and extent of AI application in healthcare. During Barack Obama's presidency, the government's reports on AI underlined the functions of AI for the public good as well as aspects of fairness, safety, and governance. With Donald Trump's presidency, the US AI strategy shifted to a freer market-oriented approach to eradicate regulatory barriers to AI innovations. In February 2019, Trump signed the Executive Order on Maintaining American Leadership in Artificial Intelligence, launching a coordinated Federal Government policy, namely, the American AI Initiative, towards the investment in AI, especially for international engagements.

[316] Communication of the European Commission, 24 April 2018, COM(2018) 237 final, *Artificial intelligence for Europe*.

[317] Communication COM(2018) 237, p. 3.

> "A specific assessment list aims to help verify the application of each of the key requirements: (1) human agency and oversight: AI systems should empower human beings, allowing them to make informed decisions and promoting their fundamental rights. Simultaneously, correct oversight mechanisms should be guaranteed, which can be accomplished across human-in-the-loop[318] and human-in-command approaches; (2) technical robustness and safety: AI systems need to be resilient and secure. they need to be safe, ensuring a fall-back plan in case something goes wrong, as well as being accurate, reliable and reproducible. That is the only way to ensure that also unintentional harm can be minimized and prevented; (3) privacy and data governance: besides ensuring full respect for privacy and data protection, adequate data governance mechanisms must also be ensured, taking into account the quality and integrity of the data, and ensuring legitimised access to data; (4) transparency: the data, system and AI business models should be transparent. Traceability mechanisms can help achieving this. Moreover, AI systems and their decisions should be explained in a manner adapted to the stakeholder concerned. Humans need to be aware that they are interacting with an AI system, and must be informed of the system's capabilities and limitations; (5) diversity, non-discrimination, and fairness: Unfair bias must be avoided, as it could have multiple negative implications, from the marginalization of vulnerable groups to the exacerbation of prejudice and discrimination. Fostering diversity, AI systems should be accessible to all, regardless of any disability, and involve relevant stakeholders throughout their entire life circle; (6) societal and environmental well-being: AI systems should benefit all human beings, including future generations. It must hence be ensured that they are sustainable and environmentally friendly. Moreover, they should take into account the environment, including other living beings, and their social and societal impact should be carefully considered; (7) accountability: Mechanisms should be put in place to ensure responsibility and accountability for AI systems and their outcomes. Auditability, which enables the assessment of algorithms, data and design processes plays a key role therein, especially in critical applications. Moreover, adequate an accessible redress should be ensured"[319].

In February 2020, the European Commission issued a White Paper[320] on AI that contains a European coordinated approach to excellence and trust[321]. Specifically, the latter announces that "Europe can combine its technological and industrial strengths with a high-quality digital infrastructure and a

[318] Human-in-the-loop ('HITL') is the process of leveraging the power of the machine and human intelligence to create machine learning-based AI models. HITL shows the process when the machine or computer system is unable to solve a problem, needs human intervention as involving in both the training and testing stages of setting an algorithm, for creating a continuous feedback loop and thus allowing the algorithm to provide efficient results.

[319] EUROPEAN COMMISSION (2021).

[320] A month before, in January 2020, the US White House issued its own draft guide for the regulation of AI applications. As in the EU, it contains ten principles that agencies should consider when formulating approaches to AI applications: public trust, public participation, scientific integrity and information quality, risk assessment and management, benefits and costs, flexibility, fairness and non-discrimination, transparency, security, and coordination. All to promote innovative and trustworthy AI and respect democratic values and human rights.

[321] Communication of the European Commission, 19 February 2020, COM(2020) 65 final, *White Paper on artificial intelligence - A European approach to excellence and trust*.

regulatory framework based on its fundamental values to become a global leader in innovation in the data economy and its applications"[322].

An example of AI health application for smartphones advanced in the EU is called Ada. By relying on rational algorithms to calculate an individual's symptoms, Ada provides users with the best 'medical guidance' it can suggest from data analysis (e.g., advise the user to visit to a doctor). Of course, this app complies with the EU General Data Protection Regulation 2016/679 (GDPR)[323] which will be discussed more deeply in chapter four[324]. Another interesting example is Corti, a software developed by a Danish company that uses ML to help clinicians draw concrete conclusions. This tool is capable to detect cardiac arrests occurring outside the hospital (i.e., in public places or at home) by intercepting emergency calls[325]. Its method of listening to calls and analysing symptoms, tone of voice, and breathing patterns in real time has proven to be faster and more precisely than humans[326]. As reported, "[Doctors] receive [actual] guidance during medical calls, ensuring that patient triage results in the best, most informed medical advice possible"[327].

3.5 Worldwide applications of AI to control the novel Coronavirus

Artificial intelligence has been employed as a tool to counteract the viral pandemic since the beginning of the outbreak[328]. Inch by inch, the scientific community has conferred high hopes that data science and AI can be used to tackle the coronavirus[329]. China, the first hotspot of the disease, has been also at the edge of technology-based tools aimed at supporting the restrictions imposed to the population, assessing the disease's evolution, and developing a vaccine or treatment. For the latter, AI has been systematically managed to hasten genome sequencing, make quicker diagnoses, and conduct scanner analyses[330]. Although recent findings prove its usefulness to access scientific

[322] Communication COM(2020) 65, p.2.

[323] Regulation (EU) of the European Parliament and of the Council, 27 April 2016, 2016/679, *on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)*.

[324] The US is, by contrast, not bound to the GDPR. Still, the Congress has introduced several bills to guarantee the protection of individual rights in AI applications. The last one is the AI JOBS Act of 2019 (H.R.827). Not particularly attached to the ethical and legal aspects of AI in healthcare, those bills require a Federal advisory committee providing advice to the Secretary. The main task of this committee is to study and assess how to integrate ethical standards in the advancement of AI or how AI can affect cost savings in healthcare.

[325] BYRSELL et al. (2021: 224).

[326] VINCENT (2018)

[327] BYRSELL et al. (2021: 223).

[328] SOOMRO et al. (2021).

[329] RATMAN (2020).

[330] CHUN (2020).

publications or research[331], AI has not erased the requirement for clinical tests yet, nor it has ousted human knowhow completely. This is mainly because the structural problems faced by health organisations in this crisis are not due to technological results apparently, but to the general administration of health services, which in theory should be competent to avoid such conditions[332]. As for the other emergency measures mentioned in the previous chapter, also the employment of new and digital technology solutions, including AI and smart apps, will be subject to judgment at the end of the crisis. So, those that may trigger a violation of individual freedoms should not be underestimated in the present with the excuse of a better security provided for the population[333].

For what concerns the practice, the first application of AI has involved the support to glean a vaccine which could first protect caregivers and then, control the pandemic (i.e., reduce congestions in hospitals). In this direction, AI has provided considerable help. Several examples can be witnessed. The American start-up Moderna has applied a biotechnology of messenger ribonucleic acid ('mRNA'), which has truly reduced the time expected to create a prototype vaccine testable on humans by applying bioinformatics[334], of which AI is an integral part[335]. IBM, Amazon, Google, and Microsoft have also offered their servers to the US authorities to administer very large datasets in epidemiology, bioinformatics, and molecular shaping[336]. The Canadian company BlueDot has the credit to have early detected the virus using AI. Now, it constantly evaluates over a hundred data sets, such as news, airline ticket sales, demographics, climate data, and animal populations[337]. It was BlueDot to detect the outbreak of pneumonia in Wuhan, China on 31 December 2019 and to identify the cities with higher probability to register infections[338]. In Europe, the Slovenian International Research Centre for Artificial Intelligence ('IRCAI') has introduced a smart tool, Coronavirus Media Watch, which sends updates to global and national news broadcast by simply selecting open online information[339]. The instrument, developed with the support of the Organisation for Economic Co-operation and Development ('OECD'), may be a valuable source of intelligence for policy makers and for the public, both willing to monitor the evolving trends of COVID-19 in their territories and around the world. Another interesting case is found in East Asia, where South Korea's AI has assisted healthcare personnel, by reducing

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[331] CAVE et al. (2021); RATHEE et al. (2021); JI et al. (2021: 903-908); QIAN (2021: 181-182); VARDHINI (2021 : 665-669).

[332] European Social Charter, Turin, 26 February 1965, Art. 11.

[333] Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (CETS No. 108), Strasbourg, 28 January 1981.

[334] Bioinformatics is a field of research focusing on computational analysis of biological data to better understand life.

[335] JUMPER et al. (2020).

[336] LARDINOIS (2020).

[337] STIEG (2020).

[338] *Ibid*.

[339] 'Coronavirus watch', instrument available at ircai.org.

the time required to design testing kits based on the genetic of the virus to a few weeks, when it would normally take two to three months[340]. Additionally, as an instrument to control the population, the example offered by Singapore in its monitoring of epidemic risks has been peculiar, due to the social approval of the restrictive measures intended to safeguard citizens' safety[341]. Namely, (1) control for individuals at risk, (2) authentication via mobile phone and geolocation, and (3) random home checks[342]. By the same token, AI has largely been employed in China in furtherance of mass surveillance policies[343]. There, remarkable devices have been developed to take the temperature and to supply law enforcement activities with 'smart helmets' signalling individuals who exhibit elevated body temperature[344]. Facial identification circuits have, however, lacked success due to the wearing of surgical masks[345]. On this basis, the company Hanvon has claimed to have created a device able to increase the recognition rate of wearers of surgical masks up to 95%[346]. Likewise, in Israel, a suggestion to use individual smartphones to warn users not to meet up with people potentially infected has been promoted[347]. In South Korea, an alert transmitted to the health authorities is generated when people do not observe the isolation period (i.e., they geolocate in a crowded place, such as on public transport or in a shopping centre)[348]. In Taiwan, a mobile phone is given to infected persons to track their GPS location so that police can trace their movements and make sure that they do not stick out from their area of confinement[349]. In Italy, a company has also realised a smartphone app, Immuni, that can be used to trace the route of a person infected with the virus and, thus, send a notification to the device of those who have recently had contact with him or her[350].

Apart from examples of AI as technological supervisor, in the United States, tension to balance between guaranteeing individual rights and protecting collective interests has been evident during this health crisis[351]. The GAFAM[352], having a vast amount of data concerning the American population, have been asked by the government to give their access to gathered and anonymous data, mainly on mobile phones, in order to fight the

[340] WATSON et al. (2020)
[341] CALVO, DETERDING, RYAN (2020: 1).
[342] VASWANI (2020).
[343] CALVO, DETERDING, RYAN (2020: 2).
[344] BORAK (2020).
[345] *Ibid*.
[346] POLLARD (2020).
[347] LAURENT (2020).
[348] *Ibid*.
[349] *Ibid*.
[350] TEBANO (2020).
[351] ROMM, DWOSKIN, TIMBERG (2020).
[352] 'GAFAM' is the acronym given to the five "Big Tech", or "Tech Giants", considered the largest and most dominant companies in the information technology industry of the United States, i.e., Amazon, Apple, Facebook, Google, and Microsoft.

spread of the virus[353]. Nevertheless, these firms have been careful due to the legal risk and image damage that this 'collaboration' could trigger[354]. Certainly, data regulation would have facilitated the public-private argument, thereby defining what kind of emergencies should let collective interests prevail over individual rights and in which cases. However, the Congress has provided no instruction toward such a law, so the debate is still open.
Lastly, misinformation on social networks and the Internet has been addressed by AI technologies via platforms fighting inappropriate content. For instance, the United Nations Children's Fund ('UNICEF') issued a statement on 9 March 2020 about the coronavirus misinformation aimed at taking steps to give accurate news by working with WHO, public authorities and online platforms, such as Facebook, Instagram, LinkedIn and TikTok[355]. To this purpose, also the CoE's Committee of Experts on the Media Environment and Media Reform ('MSI-REF') has declared[356] that the crisis should not be exploited as a pretext to restrict public access to information, nor should States introduce restrictions on media freedom outside the limits granted by Article 10 ECHR[357].
To assess the likelihood of AI applications in healthcare in the aftermath of the crisis, it is important to recognise that digital technology, including information technology, AI and ML will be relevant tools only if States seek to promote a coordinated approach to use them as support against the disease. However, the results presented by AI employment itself has revealed some limits of digital technology, which it is not expected to offset structural difficulties in healthcare so promptly. Also, it should be considered that Article 11 of the European Social Charter stipulates that:

> "With a view to ensuring the effective exercise of the right to protection of health, [State] Parties undertake, either directly or in cooperation with public or private organisations, to take appropriate measures designed inter alia:
> 1. to remove as far as possible the causes of ill-health;
> 2. to provide advisory and educational facilities for the promotion of health and the encouragement of individual responsibility in matters of health;
> 3. to prevent as far as possible epidemic, endemic and other diseases, as well as accidents"[358].

Ultimately, since States will be assessed for the emergency measures they have undertaken at the end of the crisis, it is necessary to distinguish the pros and cons met while applying digital tools and AI. In particular, the short-term measures of mass control and monitoring of the population should not be

[353] ROMM, DWOSKIN, TIMBERG (2020).
[354] OVERLY (2020).
[355] UNITED NATIONS CHILDREN'S FUND (2020).
[356] COUNCIL OF EUROPE (2020).
[357] Information Document of the Secretary General, 7 July 2020, SG/Inf(2020)19, *on the impact of the sanitary crisis on freedom of expression and media freedom*.
[358] European Social Charter, Turin, 26 February 1965, Art. 11.

belittled nor become long-lasting[359]. Firstly, standards relating to data protection, such as Convention 108(+) of the Council of Europe[360], must operate completely and in all cases, whether it involves the use of biometric data, geolocalisation, or facial recognition. Secondly, extraordinary actions should be taken in consultation with data protection authorities with specific regard to the dignity and private life of users. Finally, the various biases of the several types of surveillance operations should be subject to judgment, as they are likely to produce considerable discrimination[361].

3.6 Ethical challenges for AI application in healthcare

As the prior paragraph has indicated, the use of AI in the clinical practice of healthcare gives a great chance to renovate it for the better, but it also raises some ethical challenges which are addressed below.

3.6.1 Informed consent to use

Health AI employments, such as imaging, diagnostics, and surgery, are likely to alter the relationship between patient and practitioner[362]. Following the principle of informed consent[363], clinicians have a sort of responsibility towards the patient to alert him or her around the difficulties which may result from the applications of AI in the medical treatment. But to which extent one would take such a responsibility for granted? Would that also include the form of ML applied by the system, the type of data, and the probability of biases or other deficiencies in the information used? Indeed, the informed consent in medicine expects clinicians to always advise the patient that AI is being used. Still, some doubts can be risen for cases in which the AI runs using 'black box' algorithms[364]. The latter are likely to come out from noninterpretable

[359] HARARI (2020).

[360] Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (CETS No. 108), Strasbourg, 28 January 1981.

[361] CAHN, VEISZLEMLEIN (2020).

[362] KLUGMAN, DUNN , SCHWARTZ, COHEN (2018).

[363] Informed consent is a patient's approval to a medical or surgical procedure or to participation in a clinical study after being properly advised of the relevant medical facts and the risks involved. For research, a valid informed consent must include three major elements: (1) disclosure of information, (2) competency of the patient (or surrogate) to decide, and (3) voluntary nature of the decision.

[364] Black box AI is any artificial intelligence system whose inputs and operations are not visible to the user, or another interested party. A black box, in a general sense, is an impenetrable system. Deep learning modelling is generally conducted via black box development: The algorithm takes millions of data points as inputs and correlates specific data features to produce an output. That process is largely self-directed and is generally difficult for data scientists, programmers, and users to interpret. When the workings of software used for important operations and processes within an organization cannot easily be viewed or understood, errors can go unnoticed until they cause problems so large that it becomes necessary to investigate and the damage caused may be expensive or even impossible to repair.

machine-learning techniques that are very problematic for clinicians themselves to identify entirely[365]. So, this constitutes a very interesting concern for the fulfilment of the 'informed consent to use', since it cannot be solved by merely inform the patient about the unknown application of a certain AI mechanism. For instance, Corti's algorithms are considered a 'black box' because the developer itself does not know precisely how the software program draws its conclusions and warns emergency correspondents about someone's cardiac arrest[366]. How much transparency is, thus, required? How does this cope with the so-called 'right to explanation'? What about situations where the patient may be unwilling to accept the use of certain sets of data (e.g., genetic data and family record) because he or she does not know how certain final assumptions are retrieved? How would international law and national healthcare appropriately balance the privacy of patients with the safety and efficiency of AI? Those are all ethical questions that go beyond the informed consent to use and, thus, will receive answers in due time.

It is also relevant to consider that AI health apps are also being used daily, going from diet guidance to health evaluations assisting patients to observe medical prescriptions and to understand data gathered by wearable devices[367]. Such apps eventually raise some other concerns for bioethicists about user agreements and valid informed consent. In fact, a user agreement is a contract without a face-to-face dialog[368], so most people do not even take the time to understand it, just ignoring its 'terms and conditions'[369]. What info should, thus, be given to individuals using such apps? Are users aware that the future of the AI health app may depend on agreeing to frequent software updates (i.e., new the terms of use)? Those questions become even more tricky when data from patient-facing AI health apps affects in turn medical decision-making.

3.6.2 Safety and transparency

Safety is one of the main challenges AI faces in healthcare. The example offered by IBM Watson for Oncology's 'incorrect recommendations' for cancer treatments[370] proves the utmost importance for AI to be safe and efficient. In order for healthcare to achieve the potential of digital technology, stakeholders, especially AI developers, need to ensure both the reliability of datasets, and transparency. In particular, 'reliability' is defined as:

> "Failure-free operation over time. In health care, this definition connects to several […] aims for the health care system, particularly effectiveness (where failure can result from not applying evidence), timeliness (where failure results

[365] COHEN (2018); YU, BEAM , KOHANE (2018: 727).
[366] GERKE, MINSSEN, COHEN (2020: 301).
[367] NUFFIELD COUNCIL ON BIOETHICS (2018: 3-4).
[368] KLUGMAN et al. (2018: 40).
[369] *Ibid*.
[370] BROWN (2018); ROSS, SWETLITZ (2018).

> from not taking action in the required time), and patient-centeredness (where failure results from not complying with patients' values and preferences)"[371].

By contrast, transparency is defined by the Institute of Medicine ('IOM') as:

> "Making available to the public, in a reliable, and understandable manner, information on the health care system's quality, efficiency and consumer experience with care, which includes price and quality data, so as to influence the behaviour of patients, providers, payers, and others to achieve better outcomes (quality and cost of care)"[372].

Since the algorithms tend to require further adjustment for accurate results[373], datasets must firstly be trustworthy and valid. Then, the need of more data sharing must be always accompanied by the security in personal information disclosure. Finally, for both safety and trust of patients, transparency must be guaranteed accordingly. Possibly, the suggestion of establishing trust among stakeholders, clinicians, and patients, via the legal acknowledgement of rights involved, may be the valuable key towards a profitable implementation of AI in medical practice for all agents.

3.6.3 Algorithmic fairness and biases

Results of AI in health services depend on the inputs given to ML[374]. It is hence crucial to scrutinise also the concepts of fairness and bias (i.e., the possibility that 'impartiality' may actually result from 'prejudice'). To avoid any improper gathering and use of data, AI producers are expected to assess which ML technologies are more profitable to train the algorithms and what datasets are effectively applicable for the programming. Nevertheless, several examples have proven that algorithms can often present biases, and thus end up with injustice in treatments concerning ethnic origins and skin colour or gender[375]. Likewise, biases can also appear for other aspects that do not involve 'cultural features', such as age or disabilities[376]. Frequently, they tend to depend on the data delivered to the device[377]. For instance, if the device is trained on Caucasian patients, the AI software will likely give less precise or even incorrect recommendations for subpopulations for which the training data was underinclusive, such as African Americans[378]. Some of these biases may be solved, on the one hand, by improving data availability (i.e., promote the 'exchange of data'). On the other hand, such an improvement could be

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[371] INSTITUTE FOR HEALTHCARE IMPROVEMENT (2004: 4).
[372] KIRSCHNER (2010: 1).
[373] LEE, RESNICK, BARTON (2019).
[374] TING et al. (2020: 459-461).
[375] SHARKLEY (2018); SHORT (2018).
[376] LEE, RESNICK, BARTON (2019).
[377] *Ibid*.
[378] GERKE, MINSSEN, COHEN (2020: 304).

achieved by making some efforts to gather data from minority populations more efficiently and, thus, improve the detection of populations for whom the algorithm is (or is not) appropriate to be used.

A lasting dilemma is that there is a vast spectrum of algorithms which are inevitably complex and non-transparent[379] . Some claim, though, that what matters is not how the AI reaches certain conclusions, but whether they are correct and reliable[380]. In this direction, algorithmic fairness and biases may result manageable by applying an ample strategy of monitoring duties and providing support in order to guarantee the legal compliance of this technology with international law, as well as the enhancement of human rights in a digitalised era. As stated by the entrepreneur and business magnate Elon Musk, "there should be some regulatory oversight, maybe at the national and international level, just to make sure that we do not do something very foolish. […] with artificial intelligence, we are summoning the demon"[381].

In the end, AI has all the premises to help human beings. But still, one must guarantee its place in a specific regulatory framework to be updated to the new technological developments. Finally, it is recommended to include frequent public and political debates centred on the ethics of AI-driven healthcare such as its consequences for both workers and the society as a whole. In this way, AI's potential to enhance healthcare will depend on how one addresses its ethical and legal challenges.

[379] LEE, RESNICK, BARTON (2019).
[380] LONDON (2019: 18-19).
[381] AEROASTROMIT (2014).

Chapter IV
The interplay between eHealth and Surveillance

Nowadays, healthcare systems seem to work continuously under pressure. Ageing populations and increasing incidence of chronic disease, as well as budgetary and personnel restraints, are paving the way for a scenario where demand outweighs capacity[382]. At the same time, international political and social negotiations are trying to avert such a negative outcome by promoting equal access to affordable, high-quality and, in some cases, 'personalised' healthcare facilities for all human beings in every country[383]. However, offering high-quality services to more people while lacking personnel and supplies implies, on the one hand, adjusting governmental structures and strategies and, on the other hand, placing in order of importance how the available resources for healthcare should be allocated. Accurately foreseeing and balancing the different needs of a population is not so straightforward. As a consequence, individuals lacking the confidence in traditional healthcare have tended to reduce their reliance on usual systems and forms of care, by preferring instead some personal high-technology devices which are primarily developed to provide better information exchange and, thus, facilitate self-care[384].

In large part, such leanings towards tech-confidence dates to the advent of personal computing. From the early 1980s , policy makers themselves started to encourage individual confidence on digital information and communication technologies ('ICT'), accompanied by the improvement of machineries to support health systems[385]. The subsequent development and use of 'networked' (and later, mobile) 'eHealth' (i.e., the use of ICT) has been particularly stimulated by policy proposals at both domestic and international level[386]. The reason is to be found in eHealth's tools predisposition to be "lean, cheap, and capable of offering access to healthcare and lifestyle management anytime and anywhere"[387]. Nevertheless, as mentioned in chapter two, such technologies have soon revealed their dark side: the necessity of collecting, using, and storing a great amount of data (i.e., Big Data) belonging to single individuals and entire populations. Likewise, eHealth has implicitly allowed medical professionals and the State to (regularly) monitor (and actively get involved in) private and public health. As eHealth technologies have gradually pervaded the healthcare field and society in general, surveillance researchers (and not only) are expressing reasonable concerns about the consequences of

[382] ADAMS, PURTOVA, LEENES (2017: 1).
[383] Resolution of the UN General Assembly, 21 October 2015, A/RES/70/1, *Transforming our world : the 2030 Agenda for Sustainable Development.*
[384] HARRIS, WYATT, WATHEN (2010: 30-41).
[385] *Ibid*.
[386] ADAMS, PURTOVA, LEENES (2017: 1).
[387] *Ibid*.

these regular 'watching systems' on human rights. While social media (e.g., blog-sharing sites and other interactive platforms) and mobile apps on smartphones and tablets are swelling the scope and extent of behavioural and health-related monitoring possibilities, it is also important to remember that surveillance, or simple 'observation', has always been an essential part of medical practice[388]. Still, it has also complicatedly intertwined with the technologies that enable for advancement in health, illness, and the body[389]. Undoubtedly, contemporary society has profited from developments in the field of Public Health since the 18th Century. The advent of informatics in the field of public health has contributed to the prevention of communicable diseases[390]. Physicians and scholars have been able to conduct their research following detailed observational data allowing the tracing (and halting) diseases outbreaks[391]. And, in some cases, looking for data correlations allowed to discover the outbreak's real cause [392]. However, the progress of this kind of 'knowledge' and 'expertise' from newer technologies, such as ICT, has also increased the possibilities for States to monitor and intervene in their citizens' lives. All the recent developments in information technology for COVID-19 (i.e., smart apps and contact tracing) have suggested promising advantages[393]. Identified as web technologies (i.e., eHealth) and mobile applications for health-related purposes (i.e., mHealth), such information technologies have actually allowed the medical practice to overpass issues of time and space in the monitoring, diagnosis, and therapy of illness[394]. What seems challenging, though, is that the amount of these practices has been having the tendency to grow in extent with each generation: more data is being collected more regularly about more people[395]. And not only. There is also a growth in pace: while in the past, informatics used to evaluate the statistics after the patient data, much of the data being gathered at present is assessed in real-time (very often only by patients and healthy citizens)[396]. This is because the 'exchange of data' can now be analysed, interpreted, and acted upon human behaviour almost instantaneously. A good demonstration of such a shift is the current tendency within public health authorities to predict or uncover influenza outbreaks by checking Google searches and Twitter patterns, rather than firstly verify recorded medical files[397]. The expanded use of these technologies, among the population and the State, enhances the

[388] FOUCAULT (1973).
[389] *Ibid*.
[390] SOOMRO et al. (2021).
[391] GOSTIN et al. (2007); HEYMANN (2007) ; BOULOS, GERAGHTY (2020: 6), CAVE et al. (2021); JI et al. (2021), etc.
[392] COHEN, LYNCH, VAYENA, GASSER (2018).
[393] LIANG et al. (2019: 434-436).
[394] RYAN (2020).
[395] ZUBOFF (2019).
[396] *Ibid*.
[397] ADAMS (2016: 25-35).

growing perception that individuals and groups are constantly 'under observation', particularly in relation to their personal health and well-being. While this is not automatically a negative alteration in the interest of public health, it does raise several ethical, legal, and social concerns that are often minimised by the many pledges that these various technologies seem to offer. Having a special consideration for these ongoing innovations is necessary to guarantee that in no way digital technology bypasses international human rights law, and thus triggers foreseeable violations on human rights and personal freedoms.

In the framework of the COVID-19 pandemic, this chapter aims to address the benefits and trade-offs of eHealth as support to individuals and healthcare in the EU member States. First, it considers 'contact tracing' (mainly via smart apps) as the outcome of a balance between the need to fight the disease and the duty to protect the rights of individuals. Then, it illustrates its major implications on the right to private life. If, on the one hand, a 'rapid case identification' isolates cases and avoid further infections (Section 4.1), on the other hand, the collection, use, and storage of a great amount of personal data undermines individuals' privacy (Section 4.1.2). In this direction, the chapter outlines that, in international human rights law, the right to privacy is not an absolute right and it may be subject to limitations in certain circumstances (i.e., when a public health threat becomes a security issue) (Section 4.1.3). It is recalled, though, that any interference with the right to privacy, even when conceived as a security measure, must be in accordance with the law, in the interest of a legitimate aim, necessary and proportional (Section 4.1.4). Particularly considering the challenging outcomes of the current surveillance mechanisms built upon artificial intelligence and machine learning. In this direction, the chapter reveals that the EU has provided little guidance about how eHealth should pass the alleged proportionality test (Section 4.2). Nevertheless, the fundamental principles of voluntariness, data minimisation, and time-boundedness, expressed by the WHO, are here retrieved from the 'safe harbour' of the 2016 EU GDPR[398] (Section 4.2.1), combined with the several publications of the European Data Protection Board ('EDPB')[399]

[398] Regulation (EU) of the European Parliament and of the Council, 27 April 2016, 2016/679, *on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)*.

[399] Guidelines of the EDPB, 21 April 2020, 03/2020, *on the processing of health data for research purposes in the context of the COVID-19 outbreak*; Guidelines of the EDPB, 21 April 2020, 04/2020, *on the use of location data and contact tracing tools in the context of the COVID-19 outbreak*; Statement of the EDPB, 2 June 2020, *on restrictions on data subject rights in connection to the state of emergency in Member States*; Recommendations of the EDPB, 10 November 2020, 02/2020, *on the European Essential Guarantees for surveillance measures*; Statement of the EDPB, 9 March 2021, 03/2021, *on the ePrivacy Regulation*; Guidelines of the EDPB, 13 April 2021, 03/2021, *on the application of Article 65(1)(a) GDPR.*

(Section 4.2.2), and the forthcoming ePrivacy Regulation[400] (Section 4.2.3). Finally, the chapter delivers some core suggestions for a pragmatic, permissible, and effective implementation of data driven responses to COVID-19 and to future health-related issues, based on the interplay between eHealth and surveillance (Section 4.3).

4.1 Contact tracing in the EU and the implications for the right to private life

> "Processing personal information is indispensable to web-based services. The EU's Digital Single Market Strategy recognises the potential of data-driven technologies and services as a catalyst for economic growth. Such services over the Internet have become dependent on often covert tracking of individuals, who are generally unaware of the nature and extent of that tracking. Dominant companies in these markets may be able to foreclose new entrants from competing on factors which could benefit the rights and interests of individuals, and may impose unfair terms and conditions which abusively exploit consumers. An apparent growing imbalance between web-based service providers and consumers may diminish choice, innovation and the quality of safeguards for privacy […]"[401].

When a disease converts into a threat to general security, the balance between the need to fight the disease and the duty to protect the rights of individuals is on an unsteady equilibrium. In order to protect individuals from infection (as a threat to general security), the COVID-19 crisis has made it necessary to pursue an approach of 'extreme monitoring' which has been evidently invasive for individuals' privacy. At first sight, one may think about the general patrolling on people's movement, which has required self-certifications denouncing the 'urgent reason' to break isolation in several countries[402]. On the other hand, though, what comes later in mind, maybe less evident, is the government's collection and use of such private information (i.e., the individual data shared with public authorities). The EU, which has a strong data protection system, obliges its member States to exchange personal data collected via contact tracing as a 'common good'[403]. As already mentioned, under IHRL public authorities are allowed to restrict the right to privacy in case of public emergencies and health risks, but only as long as such limitations are found to be necessary and proportionate to a recognised aim[404]. Thus, observing (and monitoring) individuals' behaviour and health

[400] Proposal of the European Parliament and of the Council, 10 February 2021, 6087/21, *for a Regulation concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC*.
[401] Opinion of the European General Data Protection Supervisor, 23 September 2016, 8/2016, *on coherent enforcement of fundamental rights in the age of big data*, p. 3.
[402] BURLACU et al. (2020); DAVIDSON (2020).
[403] VAN KOLFSCHOOTEN, DE RUIJTER (2020: 478).
[404] Opinion 8/2016.

seems to be part of the lawful measures to overcome a declared public emergency as the COVID-19 pandemic. In this direction, the EU guidance resembles the procedures advocated in the perspective of security risk management[405].

In the past, public health surveillance has been defined as the organised collection, stock, use, and distribution of personal information to recognise an outbreak and reduce the spread of disease[406]. Directly referring to the COVID-19 pandemic, the WHO has stated that:

> "The aim of national surveillance for COVID-19 is to enable public health authorities to reduce transmission of SARS-CoV-2, thereby limiting associated morbidity and mortality.
>
> The objectives of COVID-19 surveillance are to:
> [1] Enable rapid detection, isolation, testing, and management of cases;
> [2] Detect and contain clusters and outbreaks, especially among vulnerable populations;
> [3] Identify, follow-up and quarantine contacts;
> [4] Guide the implementation and adjustment of targeted control measures, while enabling safe resumption of economic and social activities;
> [5] Evaluate the impact of the pandemic on health care systems and society;
> [6] Monitor longer term epidemiologic trends and evolution of SARS-CoV-2 virus and monitor trends in covid-19 deaths;
> [7] Contribute to the understanding of the co-circulation of SARS-CoV-2 virus, influenza and other respiratory viruses, and other pathogens"[407].

In an era of digital revolution and growth in mobile phone and social media reporting information, digital surveillance tools help governments to identify disease outbreaks and engage in case detection[408]. While new systems can deliver quick and often useful data, they can also lack of accuracy due to sample bias or over-interpretation of findings, mainly produced by a non-

[405] Security management is the identification of resources (i.e., people, buildings, systems, and information), followed by the development, documentation, and implementation of policies and procedures to protect such resources. Security risk management applied to public threats consists of (1) identification of the threats (or risk causes), (2) assessment of the existing control mechanisms, (3) prioritisation of risks by likelihood and impact, and (4) selection of an appropriate risk option or response.

[406] GOSTIN (2017: 398-399).

[407] Interim guidance of the World Health Organization, 16 December 2020, WHO/2019-nCoV/SurveillanceGuidance/2020.8, *Public health surveillance for COVID-19*, p. 3.

[408] Interim guidance of the World Health Organization, 4 June 2020, WHO/2019-nCoV/Contact_Tracing/Tools_Annex/2020.1, *Digital tools for contact tracing annex: Contact tracing in the context of COVID-19*.

centralised approach[409] to data collection[410]. Moreover, the rapidity of processing information by applying artificial intelligence and machine learning in many instances results in a wide gathering, usage, and storage of personal data that tend to affect individual autonomy and confidentiality[411]. This, indeed, ends up raising human rights matters and thus demands for further explanation.

4.1.2 Rapid identification and privacy concerns

Rapid case identification is necessary, especially during a pandemic, in order to accurately trace contacts and isolate cases[412]. Digital technologies can work as a strong supply for laboratories and experts since they favour the automatic use of symptom-based detection which directly report the case to public health databases[413]. Nevertheless, given the high percentage of pre-symptomatic diffusion for COVID-19, it has been claimed that manual contact tracing would be too slow to be effective in matching cases and consequently stopping the progression of the virus[414]. For this reason, States have largely supported the development of digital tools able to provide clever and faster response (i.e., rapid contact tracing), mainly via smartphones or wearable devices with geolocation[415]. But then, the fact that digital tools keep records of proximity among users has raised questions about how the rights of individuals using them are handled by the government and third parties (involved in the development of smart apps)[416]. Overall, if general public health data are directly identifiable and disclose details about a person's lifestyle, behaviours, and health[417], the right to privacy is the most evidently affected by data sharing. As the Article 12 UDHR states:

> "*No one shall be subjected to arbitrary interference with his privacy*, family, home or correspondence, nor to attacks upon his honour and reputation.

[409] By using a 'Bluetooth Low Energy' technology, the decentralised approach relies on keeping the data locally on the user's device. Each user gets an 'unpersonal' ID to log of the people with whom he or she has been in a proximity to within the past weeks. If someone anonymously declares to have tested positive to COVID-19, all those who have been in contact with him or her will be alerted and provided with further advice. With the decentralised privacy design, the user's data remain fully anonymous, and it cannot go to third parties. By contrast, a centralised approach entails directly sending the personal data collected to a central server. Some countries, as Germany, guarantee that data is anonymised before being passed to the server. Others, as China, do not follow the same policy, thus they may send multiple identifiable information to external servers. Although it is a matter of local data protection regulations and standards, it is feasible to argue that the second approach is more likely to lead to the abuse and misuse of sensitive personal data.
[410] BUDD (2020: 1190).
[411] VAN KOLFSCHOOTEN, DE RUIJTER (2020).
[412] KOPPESCHAAR et al. (2017: 66).
[413] BUDD (2020: 1185-1189).
[414] PARKER (2020: 428).
[415] FERRETTI et al. (2020: 2-6).
[416] *Ibid.*
[417] PARKER (2020:430).

> Everyone has the right to the protection of the law against such interference or attack *threaten by the collection and storage of personal information and movements* (emphasis added)"[418].

But what does privacy mean and why does it matter?
Indeed, privacy is a fundamental right, indispensable for the autonomy and the protection of human dignity, and the basis upon which many other human rights are built[419]. Privacy established barriers and boundaries to protect people from unjustified interference in private life, thus allowing a sort of negotiation between the individual and the world around him or her. As a result, privacy may be also considered a preventive weapon against arbitrary and unjustified use of power. In modern society, the discussion about privacy has appeared as a debate about contemporary freedoms. As individuals decide how to establish and protect the 'boundaries' around them (i.e., what they consider their private sphere), they equally determine (1) the ethics of contemporary life, (2) the rules setting the behaviour in public spaces, and (3) the limits upon State's power[420].
As a matter of fact, technology has always been entwined with the individual right to contemplate part of his or her life as private and confidential[421]. Still, individuals' possibility to refer to their right to privacy is higher than before, also because of the growing functions that surveillance has acquired in recent years. For instance, one can currently identify individuals amidst mass data sets and streams, and equally make decisions about people based on broad compilation of data[422]. Also, it is now possible for certain private companies and public authorities to observe conversations, commercial transactions, and locations visited by individuals[423]. These new prospects and resources are likely to prompt negative impacts on human rights and personal freedoms, as they may discourage action, exclude, and discriminate[424]. Likewise, they tend to influence how individuals perceive the relations connecting each other, the market, society in general, and, of course, the State.

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[418] Resolution of the UN General Assembly, 10 December 1948, A/RES/217(III), *Universal Declaration of Human Rights*, Art. 12.
[419] Outside this strict context, privacy protection is frequently perceived to limit society's intrusion into a person's affairs. Thus, it can be divided into the following facets: information privacy, bodily privacy, privacy of communications, and territorial privacy. The first involves the establishment of rules governing the collection and handling of personal data such as credit information and medical records; the second concerns the protection of people's physical selves against invasive procedures such as drug testing and cavity searches; the third covers the security and privacy of mail, telephones, email and other forms of communication; and the last one concerns the setting of limits on intrusion into the domestic and other environments such as the workplace or public space.
[420] Indeed, one refers here to what single individuals consider as their own 'private sphere', not that the right to privacy depends on people's personal perceptions and feelings.
[421] DEN EXTER (2016).
[422] KOPPESCHAAR et al. (2017: 66).
[423] DELLA MORTE (2020).
[424] BANA, CHRISTOU, SACCO (2020); DAGRON, FORMAN, MEIER, SEKALALA (2020).

In international law, the right to privacy is conceived and enshrined by all the major international and regional human rights instruments[425]. It is worth mentioning here, apart from the already quoted Article 12 ECHR, Article 8 ECHR, which explicitly recognises a right (and duty) to respect every person's private and family life, claiming that:

> "1. *Everyone has the right to respect for his private and family life*, his home and his correspondence.
> 2. There shall be *no interference* by a public authority with the exercise of this right *except such as is in accordance with the law* and is *necessary* in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of *health* or morals, or for the protection of the rights and freedoms of others (emphasis added)"[426].

Also, Article 17 ICCPR stipulates that:

> "1. *No one shall be subjected to arbitrary or unlawful interference with his privacy*, family, home, or correspondence, nor to unlawful attacks on his honour or reputation.
> 2. Everyone has the right to the protection of the law against such interference or attacks (emphasis added)"[427].

A key aspect of the right to privacy today is the right to protection of personal data, which is subject to a particular safeguard under several international and regional instruments[428], including the complex EU GDPR (examined later in this chapter)[429]. From 2020, despite the recognition of such international rules, monitoring systems have been notably implemented, also in democratic countries, to control the behaviour of individuals and the trend of the pandemic. As one may expect, the involvement of artificial intelligence to develop innovative digital surveillance mechanisms, such as smart apps for contact tracing, has soon raised questions about data collection, exchange and storage, for the present and for the future.

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[425] The right to privacy is also articulated in Article 14 of the United Nations Convention on Migrant Workers; Article 16 of the UN Convention on the Rights of the Child; Article 10 of the African Charter on the Rights and Welfare of the Child; Article 4 of the African Union Principles on Freedom of Expression; Article 11 of the American Convention on Human Rights; Article 5 of the American Declaration of the Rights and Duties of Man, Articles 16 and 21 of the Arab Charter on Human Rights; Article 21 of the ASEAN Human Rights Declaration; and Article 8 of the European Convention on Human Rights.

[426] European Convention on Human Rights, Rome, 4 November 1950, Art. 8.

[427] International Covenant on Civil and Political Rights, New York, 16 December 1966, Art. 17.

[428] To name but a few, the 2013 OECD's Guidelines on the Protection of Privacy and Transborder Flows of Personal Data, the 2018 Council of Europe Convention 108+ for the Protection of Individuals with Regard to the Automatic Processing of Personal Data, the EU General Data Protection Regulation, the 2004 Asia-Pacific Economic Cooperation Privacy Framework, and the 2010 Economic Community of West African States Supplementary Act.

[429] See 'A safe harbour: the General Data Protection Regulation' (Chapter IV, Section 4.2.1).

At first sight, together with privacy concern, one may consider at least other four foreseeable human rights 'suspicions' in the application of AI and ML in health-related digital contact tracing mechanisms. First, the real efficiency of digital tools for global health surveillance is controversial since many of them are still in the experimental phase[430]. Second, the fact that third-party actors have substituted governments in collecting, employing, and storing data, receives critics of accountability. Therefore, who has now access to personal health information could exploit it in ways that could irreparably damage trust in public health surveillance[431]. Third, imposing digital surveillance devices (i.e., contact tracing apps) could lead to discriminate already disadvantaged groups who are not able to afford and use such devices. For instance, if people are required to use smart apps to access public health services, this is very likely to increase discrimination and inequality if an individual cannot (or just do not want to) even download them[432]. Finally, the abuse of data or the improper analysis due to sample bias could reduce public confidence in public health surveillance itself, since the latter may provide unbalanced responses if similar digital tools use different kinds of algorithms as inputs to machine learning[433]. In this framework, the WHO has declared that information for rapid identification of health emergencies can save lives[434]. However, contact tracing directly affects individual privacy and behaviours[435], so it feasible to consider it as both a support and a challenge for domestic and international security. In the context of the COVID-19 outbreak, the European Commission has issued a toolbox for contact tracing and its 'standardisation' between member States[436]. In this guidance, privacy is a crucial concern, just as it is the use of contract tracing in a proportionate manner[437]. Still, there is no straightforward suggestion as to what proportionality means in this case[438] and how one should properly assess the rationality of tracing of individuals and their contacts.

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[430] GASSER et al. (2020: 428-431).
[431] PERSAD, EMANUEL (2020: 2241-2242).
[432] DELLA MORTE (2020).
[433] *Ibid*.
[434] WORLD HEALTH ORGANIZATION (2018).
[435] VAN KOLFSCHOOTEN, DE RUIJTER (2020: 479).
[436] Communication of the EU Commission, 17 April 2020, C/2020/2523, *Guidance on Apps supporting the fight against COVID-19 pandemic in relation to data protection (2020/C 125/I/01).*
[437] *Ibid*.
[438] For the completion of States' internal risk management and 'proportionate responses', the European Data Protection Supervisor's "Guidelines on assessing the proportionality of measures that limit the fundamental rights to privacy and to the protection of personal data", published on 19 December 2019, are intended to help with the assessment of compliance of proposed measures with EU law on data protection. They have been developed to assist EU policymakers and legislators in preparing or scrutinising measures that involve the processing of personal data and limit the rights to protection of personal data and to privacy. Therefore, these Guidelines could support member States in finding proportionate solutions minimising the conflictual concerns (i.e., individual rights and general interests).

In the EU, member States are expected to disclose information of contact-tracing results when it is relevant to serious cross-border threats to health via an electronic information system: the Early Warning and Response System ('EWRS')[439]. This may involve personal data and health data for the purpose of contact tracing[440]. This cooperation on contact tracing among member States intensifies the impact on the right to data protection and aggravates the risks for individual's right to privacy infringement in case of a pandemic outbreak. In any serious EU cross-border threats to health, public authorities may substantially limit individual freedoms[441]. During the COVID-19 crisis, as emphasised in the previous chapter, the general interest of public health may dwarf individual privacy, even though the right to privacy is significantly protected in EU fundamental rights treaties and in national constitutions[442]. But as COVID-19 has made evident, privacy is not an absolute right and can be limited whenever specific conditions are met, such as a health security threat[443]. Yet, as indicated in Article 52 of the Charter of Fundamental Rights of the EU:

> "Any limitation on the exercise of the rights and freedoms [...] must be provided for by law and respect the essence of those rights and freedoms. Subject to the principle of proportionality, limitations may be made only if they are necessary and genuinely meet objectives of general interest recognised by the Union or the need to protect the rights and freedoms of others"[444].

If it is true that "in case a public health threat rises to the level of a threat to security, public health interventions start to resemble security interventions"[445], the COVID-19 menace undoubtedly enters this area of risk. In this respect, an emergent tendency is found in the EU to 'securitise' public health, leading to a combination of policies on public health and public security[446]. Public health policy and national security policy share their balancing of the rights of the public against the rights of the individual, to be done in a proportionate manner[447]. In addition, general public health has proven to be better fulfilled at the 'expenses' of individual autonomy, just as national security normally is [448]. Given this, adopting the measure of contact tracing is strongly evocative of surveillance actions undertaken to tackle national security issues, when the privacy of individuals is proportionately

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[439] *Ibid*.
[440] Decision 1082/2013/EU; Regulation (EU) 2016/679, Art. 9.
[441] ELBE (2006).
[442] European Convention on Human Rights, Rome, 4 November 1950, Art. 8; C Charter of Fundamental Rights of the European Union, Nice, 7 December 2000, Art. 7, 8.
[443] European Convention on Human Rights, Rome, 4 November 1950, Art. 8.2.
[444] Charter of Fundamental Rights of the European Union, Nice, 7 December 2000, Art. 52.
[445] VAN KOLFSCHOOTEN, DE RUIJTER (2020: 479).
[446] DIJKSTRA, DE RUIJTER (2017 : 616-618)
[447] *Ibid*.
[448] SINHA (2013: 6890) ; ECKMANNS, FÜLLER, ROBERTS (2019: 10-11).

limited for the aim of the safety of a greater part of the population[449]. From 2013 the EU has been having a great role in pandemic responses, as stated in the 'Health Threats Decision'[450]. Thus, contact tracing should not be considered a national issue and domestic responsibility if data is shared at the EU level. However, as mentioned, in EU health law there is only partial guidance regarding how public health can be safeguarded in a proportionate manner when a large amount of personal data is shared among States[451]. Thus, one should assess the proportionality of limitations on the right to privacy (e.g., via contact tracing) considering that any measure must never go beyond what is required to the 'special' aim pursued (i.e., controlling and avoiding the spread of the disease). The analysis of the threat to public health triggered by SARS-CoV-2 presents some similarities with measures of security risk management. But when does a public threat become a security issue?

4.1.3 When a public health threat becomes a security issue

Privacy and security are two sides of the same coin. Both are inherent in every individual, and both assume strength by the recognition of the other. To put it another way, individual privacy is a right grounded upon the respect and the protection of private and family life[452], while security is the right to see this discretion guaranteed in a real context. Still, without privacy, personal security would not be a matter of international concern, since any private and public entity could just act as individuals' private sphere would not exist, and thus watch over every single aspect of a person's life.

In IHRL, it is expressly affirmed that "everyone has the right to liberty and security of person"[453] and that "no one shall be deprived of his liberty"[454]. In this direction, over the past two decades, the EU's health emergency response has moved from a 'public health response model' to a 'preparedness model', developing a policy guidance made by security experts instead of solely health authorities[455]. The 9/11 attacks in United States and the following bioterrorism with Anthrax[456] have put public health on the political agenda in the EU and have worked as a strong reminder to secure EU public health[457]. A good example of the subsequent 'securitisation' is the 'Health Threats Decision' (No. 1082/2013/EU), connecting EU public health and security policy with a

[449] VAN KOLFSCHOOTEN (2019: 44-46).
[450] DE RUIJTER (2017).
[451] BASTOS, DE RUIJTER (2019 : 610-621).
[452] European Convention on Human Rights, Rome, 4 November 1950, Art. 8.
[453] European Convention on Human Rights, Rome, 4 November 1950, Art. 5
[454] *Ibid*.
[455] DE RUIJTER (2017).
[456] A biological attack, or bioterrorism, is the intentional release of viruses, bacteria, or other germs that can sicken or kill people, livestock, or crops. It mainly refers to the 2001 anthrax attacks in the United States, in which letters containing anthrax spores were sent to several news media offices killing several people.
[457] GREER et al. (2019).

specific regard to cooperation and coordination among various social and political actors[458]:

> "1. This Decision lays down rules on epidemiological surveillance, monitoring, early warning of, and combating serious cross-border threats to health, including preparedness and response planning related to those activities, in order to coordinate and complement national policies.
>
> 2. This Decision aims to support cooperation and coordination between the Member States in order to improve the prevention and control of the spread of severe human diseases across the borders of the Member States, and to combat other serious cross-border threats to health in order to contribute to a high level of public health protection in the Union.
>
> 3. This Decision also clarifies the methods of cooperation and coordination between the various actors at Union level"[459].

The document has a wide scope of application since it specifically defines threats of biological origin (such as communicable diseases), threats of chemical origin, and threats of unknown origin all as serious cross-border threats to health[460]. So, from this decision, one can extrapolate the idea that the communicable disease tools of contact tracing fall into the realm of security. According to some scholars, security and public health always come together in the field of surveillance, such as border control and tracing of subjects[461]. By means of security tools, combining critical awareness and other strategies of preparedness may deliver greater possibilities to counteract the effects of pandemics. Because indeed, one should remember, "emergency situations call for extraordinary measures"[462]. But contemplating health as a security danger may trigger negative effects for the protection of fundamental rights in health emergencies. The language of security can legitimate public authorities to establish even stricter measures[463], so one should act very carefully when considering surveillance as a desirable security measure.

4.1.4 Contact tracing as a security measure during COVID-19

At this point, it is general recognised that throughout the public health response to COVID-19 contact tracing has had a key role[464]. To guide member States in the process of contact tracing as a security measure to implement, the European Centre for Disease Prevention ('ECDC') has issued a document that

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[458] Decision of the European Parliament and the Council, 22 October 2013, No. 1082/2013/EU, *on serious cross-border threats to health and repealing Decision No. 2119/98/EC*.
[459] Decision No. 1082/2013/EU, Art. 1.
[460] Decision No. 1082/2013/EU, Art. 2.1.
[461] PURNHAGEN et al. (2020: 299).
[462] TZEVELEKOS, DZEHTSIAROU (2020: 143).
[463] FIDLER (2004: 800); UPSHUR (2005: 335-340).
[464] ZWITTER, GSTREIN (2020: 1-7); BANA, CHRISTOU, SACCO (2020) ; RYAN (2020).

defines the major steps in the perspective of the COVID-19 response[465]. The ECDC specifically considers a contact of a person infected with COVID-19 as any person who has been in contact with a COVID-19 case from 48h before the onset of symptoms of the case to 14 days after the onset of symptoms[466]. Confirmed COVID-19 patients are questioned to detect their contacts and then classified based on the level of exposure[467]. For example, "members of the patient's household and healthcare workers providing care without protective equipment are considered close contacts with high-risk exposure. A fellow traveller in the train for less than 15min is classified as low-risk exposure"[468]. The ECDC informs that high-risk exposure contacts are vigorously supervised by public health authorities and quarantined, while low-risk exposure contacts should be subject to self-monitor for symptoms and avoid close physical contact[469]. As regards the means of contact tracing, member States can pursue their own approaches[470]. However, the European Commission has released a recommendation on a well-defined European coordinated approach for the use of mobile applications (apps) for contact tracing[471]. As a result, even if now there are several tracing apps employed in Europe, there are some specified limitations that enable the protection of the right to privacy of users. First and foremost, the Commission has emphasised that, even in times of public health emergencies, restrictions must meet the requirements of necessity and proportionality[472]. Yet it has reminded, one more time, that the right to privacy is not absolute and thus it can be limited when this is in accordance with the law, in the interest of a legitimate aim, necessary and proportional[473]. The proportionality test, we recall, essentially relies on the balancing of competing interests[474]. For contact tracing, interests at stake are, on the one hand, the right to privacy of the individual whose personal data is processed, and, on the other hand, the public interest to prevent and to respond to the virulent threat of SARS-CoV-2. Whether contact tracing is actually proportionate to the health emergency depends on the national context in which States implement such a mechanism of monitoring[475]. Moreover, evoking States' positive obligation to

[465] Technical Report of the European Centre for Disease Prevention, 18 November 2020, *Contact tracing: public health management of persons, including healthcare workers, who have had contact with COVID-19 cases in the European Union – third update*.
[466] *Ibid*.
[467] *Ibid*.
[468] VAN KOLFSCHOOTEN, DE RUIJTER (2020: 482).
[469] *Ibid*.
[470] *Ibid*.
[471] Communication C/2020/2523.
[472] Report of the Committee on Legal Affairs and Human Rights, 16 September 2020, No. 15139, *The impact of the Covid-19 pandemic on human rights and the rule of law*.
[473] European Convention on Human Rights, Rome, 4 November 1950, Art. 8. Charter of Fundamental Rights of the European Union, Nice, 7 December 2000, Art. 52.
[474] MURPHY (2020: 38).
[475] VAN KOLFSCHOOTEN, DE RUIJTER (2020: 484).

protect people's health[476] leads to claim that contact tracing is a security measure suitable to guarantee individuals and States' safety and, for this reason, appropriate and proportionate.

4.2 EU guidance on proportionate contact tracing

Contact tracing is the emblem of the contrast between the recognition of the individual's right to privacy and the need to protect public health. Indeed, such a 'digital measure' is applied by health authorities at the national level, but the real balancing of interests between privacy and public health is staged at the EU level. By establishing the obligation for member States to share health data for the aim of contact tracing in the Health Threats Decision, the European Commission has indirectly stated that the protection of public health offsets the importance of the right to privacy in case of serious cross border threats to health[477]. However, the decisions regarding the scope and extent of these restrictions are left, as mentioned, to the single governments. Still, health surveillance during the COVID-19 crisis has not been allowed to devaluate the criteria of privacy protection for EU individuals. Member States collecting and exchanging health data for the purpose of contact tracing have been bound to guarantee that any interference with the right to privacy is proportionate to the goal of public health. Notwithstanding this general acknowledgement, for a novel infectious disease it is extremely difficult for national health authorities to distinguish and satisfy the proportionality of the measures. In other special circumstances, such as national security threats, it seems more reasonable to adjust individual freedoms and limitative measures according to the nature and gravity of the threat. In the framework of the COVID-19 outbreak in Europe, lack of testing kits, doubt about the timeline of the disease and vaccines, and other data gaps may easily incite ill-grounded conclusions about the actual necessity of limiting individual rights and freedoms[478]. Nevertheless, whether the individual right to privacy has been 'unreasonably' limited by national authorities applying contact tracing can only be assessed afterwards, when and if the *status quo ante* (in terms of human rights respect) will be re-established.

Another interesting point is that contact tracing tends to be conceived under pressure of time[479]. So, if formulated precipitously, it may lack an intentional and well-informed balancing of interests. Additionally, the COVID-19 crisis itself reveals that the protection of the right to privacy varies a lot among States. The EU should further explain States' responsibilities regarding public health surveillance and contact tracing since a precise benchmark for the proportional resort of such measures is not incorporated in the most recent

[476] Judgment of the European Court of Human Rights, 8 July 2004, 43924/00, *Vo v. France*.
[477] Report No. 15139.
[478] VAN KOLFSCHOOTEN, DE RUIJTER (2020: 488).
[479] LEMARIE (2020: 478).

guidance from the Commission[480]. Nevertheless, the latter are useful to clarify the essential requirements national apps should have, namely that they be "voluntary approved by the national health authority; privacy-preserving [meaning that] personal data is securely encrypted; and dismantled as soon as no longer needed"[481]. Again, it is not clearly delineated how such apps should pass the proportionality test. The aforementioned GDPR, the contributions of the EDPB[482], and the 2021 proposal[483] of a new ePrivacy Regulation[484], albeit providing little guidance as to guaranteeing a precise proportionality test for contact tracing via smart apps, are examined below as key instructions to any (domestic) law proposal which entails a vast collection, usage, and storage of personal data. Indeed, to safeguard individual and population's information from any feasible misuse while being processed and profiled.

4.2.1 A safe harbour: the General Data Protection Regulation

The much-cited GDPR has been applied in all EU Member States since 25 May 2018[485], establishing a new era of data protection law in the EU. This Regulation has the main purpose of contributing to the accomplishment of freedom, security, and justice, as well as promoting a strong economic union, and the well-being of persons[486]. As regards to the latter, the initial legal act confirms the value of privacy as a fundamental right of individuals:

> "The processing of personal data should be *designed to serve mankind*. The *right to the protection of personal data is not an absolute right*; *it must be considered in relation to its function in society and be balanced against other fundamental rights, in accordance with the principle of proportionality*. This Regulation respects all fundamental rights and observes the freedoms and principles recognised in the Charter as enshrined in the Treaties, in particular the respect for private and family life, home and communications, the protection of personal data, freedom of thought, conscience and religion, freedom of expression and information, freedom to conduct a business, the right

[480] Communication C/2020/2523; Document of the eHealth Network, 13 May 2020, *Interoperability guidelines for approved contact tracing mobile applications in the EU*.
[481] Document of the eHealth Network, 15 April 2020, *Mobile applications to support contact tracing in the EU's fight against COVID-19 - Common EU Toolbox for Member States*.
[482] Guidelines 03/2020; Guidelines 04/2020; Statement of the EDPB, 2 June 2020, *on restrictions on data subject rights in connection to the state of emergency in Member States*; Recommendations 02/2020; Statement 03/2021; Guidelines 03/2021.
[483] To keep pace with the ever-changing tech field, the EU has already started to implement parts of the ePrivacy Regulation into other laws. Since December 2020, the "European Electronic Communications Code" has required EU Member States to expand the definition of 'Electronic Communications Services' in their telecommunication laws to include so-called 'Over-the-Top-Services' where signals are transmitted over the internet (e.g., instant messaging services).
[484] Statement 03/2021.
[485] Regulation (EU) 2016/679, Art. 99.2.
[486] Regulation (EU) 2016/679 (initial legal act), para. 2.

> to an effective remedy and to a fair trial, and cultural, religious and linguistic diversity (emphasis added)"[487].

The consolidated text of the GDPR clearly defines the scope and extent of the processing of personal data[488], no matter if the processing takes place in an EU or non-EU country, such as in the US[489]. Besides, the GDPR may also affect businesses running overseas. For instance, it applies where the processor or controller is launched in a non-EU country and manages personal data of subjects who are in the Union (i.e., also for services, such as newspapers and related websites) or for the monitoring of the data subjects' behaviour[490]. The GDPR also rules where a controller holds personal data and is established in a non-EU country, but "in a place where Member State law applies by virtue of public international law"[491] (Table 1). A list of twenty-six definitions for the purpose of the GDPR is specifically provided by Article 4. For example, 'personal data' identifies "any information relating to an identified or identifiable natural person"[492]; 'processing' means "any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction"[493]; a 'controller' is "the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data"[494]; and a 'processor' means "a natural or legal. person, public authority, agency or other body which processes personal data on behalf of the controller"[495].

[487] Regulation (EU) 2016/679 (initial legal act), para. 4.
[488] Regulation (EU) 2016/679, Art. 3.1.
[489] *Ibid.*
[490] Regulation (EU) 2016/679, Art. 3.2; GERKE (2018).
[491] Regulation (EU) 2016/679, Art. 3.3.
[492] Regulation (EU) 2016/679, Art 4.1.
[493] Regulation (EU) 2016/679, Art 4.2.
[494] Regulation (EU) 2016/679, Art 4.7.
[495] Regulation (EU) 2016/679, Art 4.8.

Table 2: GDPR Territorial scope

Art. 3(1)	Art. 3(2)	Art. 3(3)
Processing of personal data	Processing of personal data of **data subjects who are in the EU**	Processing of personal data
In the context of the activities of a **EU establishment** of a controller or a processor	**Non-EU establishment** of a controller or a processor	**Non-EU establishment** of a controller
Processing takes place **within or outside the EU**	The processing activities are related to: a. the **offering of goods or services** (paid or for free) to such data subjects in the EU; or b. the **monitoring of the data subjects' behavior** as far as their behavior takes place within the EU	But in a place where Member State law applies by virtue of **public international law**

Source: Regulation (EU) 2016/679, Art. 3.

In healthcare, the connotation of 'data concerning health' under Article 4.15 GDPR is particularly relevant: "personal data related to the physical or mental health of a natural person, including the provision of healthcare services, which reveal information about his or her health status"[496]. For these definitions and for several reasons, the EU's GDPR has been considered an 'all-encompassing set of rules'[497]. According to Article 9.1 GDPR, the processing of specific types of personal data, such as genetic data[498], biometric data[499], and data concerning health[500] is prohibited[501]. Still, Article 9.2 GDPR

[496] Regulation (EU) 2016/679, Art 4.15.
[497] CIRONE (2020).
[498] As defined by Regulation (EU) 2016/679, Art 4.13, 'genetic data' means personal data relating to the inherited or acquired genetic characteristics of a natural person which give unique information about the physiology or the health of that natural person and which result from an analysis of a biological sample from the natural person in question.
[499] As defined by Regulation (EU) 2016/679, Art 4.14, 'biometric data' means personal data resulting from specific technical processing relating to the physical, physiological, or behavioural characteristics of a natural person, which allow or confirm the unique identification of that natural person, such as facial images.
[500] As defined by Regulation (EU) 2016/679, Art. 4.15, 'data concerning health' means personal data related to the physical or mental health of a natural person, including the provision of health care services, which reveal information about his or her health status.
[501] Regulation (EU) 2016/679, Art. 9.1.

envisages a long list of exceptions: For example, the prevision in Article 9.1 of the GDPR shall not be applied if:

> "(a) the data subject has given explicit consent to the processing of those personal data for one or more specified purposes […];
> (b) processing is necessary for the purposes of carrying out the obligations and exercising specific rights […] in the field of employment and social security and social protection law […];
> […]
> (g) processing is necessary for reasons of substantial public interest, on the basis of Union or Member State law which shall be proportionate to the aim pursued, respect the essence of the right to data protection and provide for suitable and specific measures to safeguard the fundamental rights and the interests of the data subject;
> […]
> (i) processing is necessary for *reasons of public interest in the area of public health, such as protecting against serious cross-border threats to health or ensuring high standards of quality and safety of health care* (emphasis added)"[502].

Failure to comply with these GDPR rules results in administrative fines up to 4% of an undertaking's annual global turnover of the previous year[503], as it happened in Portugal[504].
As mentioned in the previous chapter, the GDPR has a key role in providing terms and conditions for developers and users handling big data and it is particularly relevant for AI-driven healthcare and medicine. For example, where personal data are gathered, the controllers are expected to provide data subjects with information about "the existence of automated decision-making, including profiling, […], at least in those cases, meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject"[505]. Moreover, also data subjects are entitled to access to the personal data in process and the information about "the existence of automated decision-making, including profiling, […] and […] meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject"[506].

[502] Regulation (EU) 2016/679, Art. 9.2.
[503] Regulation (EU) 2016/679, Art. 83.5.
[504] MONTEIRO (2019). An hospital was charged 400 thousand Euro for two breaches of the GDPR. First, 300 thousand for the permit of indiscriminate access to a set of data by professionals, who should only be able to access them in specific cases. Second, 100 thousand Euro for the incapacity to ensure the confidentiality, integrity, availability and permanent resilience of treatment systems and services.
[505] Regulation (EU) 2016/679, Arts. 13.2(f), 14.2(g).
[506] Regulation (EU) 2016/679, Art. 15.1(h).

To be clear, automated decision-making means a decision that is made with no human involvement[507]. The term 'profiling' may be considered a subcategory of 'processing', since it includes:

> "*Any form of automated processing of personal data* consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to *analyse* or *predict* aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements (emphasis added)"[508].

Still, 'profiling' differs from 'processing' for two additional features: its automatisation and its assessment functions[509]. Under Article 22.1 GDPR, data subjects also "have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her"[510]. Undeniably, there are some exceptions, but generally they do not apply when decisions rely on genetic and biometric data, as well data concerning health[511]. It is debatable, though, whether the GDPR grants a 'right to explanation' and what such a right means[512]. Indeed, the GDPR mentions the right to receive an explanation about the conclusions drawn after the assessment[513]. Still, one may raise doubts about the legal presence and the practicability of such a right to explanation for certain automated decisions. To recall, the 'black box' algorithms discussed in paragraph 3.6.1 of chapter three, have been considered in the viewpoint of the right to informed consent[514]. As argued, the latter is one of the ethical challenges posed by artificial intelligence in healthcare. Here 'the right to an explanation' (for 'transparency in treatments' and 'storage of personal data') is likely to fall into the same field of 'challenges' described in the former chapter concerning the health and the behaviour of patients (i.e., 'informed consent to use', 'safety and transparency', and 'algorithmic fairness and biases'[515]). However, Recital 71 of the GDPR is not officially binding, and a right to explanation is not required by the legally binding conditions enumerated in Article 22.3 GDPR[516]. Therefore, there is no proof of an 'official right' of the data subject to obtain insight of the decision-making process of algorithms[517], and thus to access to the 'black boxes' of health AI

[507] COHEN (2018); YU, BEAM , KOHANE (2018).
[508] Regulation (EU) 2016/279, Art. 4.4.
[509] GOODMAN, FLAXMAN (2017: 52).
[510] Regulation (EU) 2016/279, Art. 22.1
[511] Regulation (EU) 2016/279, Arts. 22.2, 22.4.
[512] DE LA TORRE (2019).
[513] WACHTER, MITTELSTADT, FLORIDI (2017).
[514] See 'Informed consent to use' (Chapter III, Section 3.6.1) of this work.
[515] *Cfr*. 'Ethical challenges for AI applications in healthcare' (Chapter III, Section 3.6).
[516] WACHTER, MITTELSTADT, FLORIDI (2017: 78).
[517] WACHTER, MITTELSTADT, RUSSELL (2018: 842-844).

applications. Nevertheless, even though a legally binding right to explanation for precise automated decisions is not envisioned, Articles 13.2(f), 14.2(g), and 15.1(h) of the GDPR warrant data subjects to attain "meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing"[518] (i.e., automated decision-making systems). This 'essential explanation' involves the aim of the automated decision-making system, how the system generally runs, the forecast impact, and other relevant functions[519]. Possibly, companies (i.e., controllers) under the GDPR should perform a data protection impact evaluation for new AI-based technologies deployed in the clinical space (i.e., contact tracing). Overall, Article 35.1 GDPR entails such an evaluation, before the processing, for new technologies where the processing "is likely to result in a high risk to the rights and freedoms of natural persons"[520]. Article 35.3 GDPR openly asserts when a data protection impact evaluation is expressly required for:

> "(a) […] personal aspects relating to natural persons which is based on *automated processing*, including profiling, and on which decisions are based that produce legal effects concerning the natural person or similarly significantly affect the natural person;
> (b) processing on a large scale of *special categories of data* referred to in Article 9(1), or of personal data relating to criminal convictions and offences referred to in Article 10; or
> (c) a *systematic monitoring* of a publicly accessible area on a large scale (emphasis added)"[521].

For instance, genetic data and data concerning health[522].
In addition to the GDPR, the Regulation (EU) 2018/1807[523] has been directly enforceable since 28 May 2019[524]. This Regulation "aims to ensure the free flow of data other than personal data within the Union by laying down rules relating to data localisation requirements, the availability of data to competent authorities and the porting of data for professional users"[525]. It applies to the processing of electronic data (thus beyond personal data as defined in the GDPR[526]), which is:

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[518] Regulation (EU) 2016/679, Arts. 13.2(f), 14.2(g), 15.1(h).
[519] WACHTER, MITTELSTADT, RUSSELL (2018: 863-871).
[520] Regulation (EU) 2016/279, Art. 35.1.
[521] Regulation (EU) 2016/279, Art. 35.1(a)(b)(c).
[522] Article 35.7 of the GDPR lists the minimum requirements for an evaluation to be made lawfully, such as a clarification of the processing operations, an assessment of the risks to the freedoms and rights of data subjects, and the measures pursued to address foreseeable risks.
[523] Regulation (EU) of the European Parliament and of the Council, 14 November 2018, 2018/1807, *on a framework for the free flow of non-personal data in the European Union*.
[524] Regulation (EU) 2018/1807, Art. 9.
[525] Regulation (EU) 2018/1807, Art. 1.
[526] Regulation (EU) 2016/279, Art. 4.1.

> "(a) provided as a service to users residing or having an establishment in the Union, regardless of whether the service provider is established or not in the Union; or
> (b) carried out by a natural or legal person residing or having an establishment in the Union for its own needs"[527].

For datasets composed of personal and nonpersonal data, the Regulation (EU) 2018/1807 applies to the nonpersonal data part of such datasets as well[528]. For datasets, the European Commission has issued a guideline stating that:

> "In most real-life situations, a dataset is very likely to be composed of both personal and nonpersonal data. This is often referred to as a 'mixed dataset'. Mixed datasets represent the majority of datasets used in the data economy and commonly gathered thanks to technological developments such as the Internet of Things (i.e., digitally connecting objects), artificial intelligence and technologies enabling big data analytics.
> Examples of mixed datasets include a company's tax records, mentioning the name and telephone number of the managing director of the company. This can also include a company's knowledge of IT problems and solutions based on individual incident reports, or a research institution's anonymised statistical data and the raw data initially collected, such as the replies of individual respondents to statistical survey questions"[529].

However, it is the GDPR which operates whenever personal and nonpersonal information in datasets are intricately connected[530] (i.e., current situation of heath emergency). Therefore, the two regulations strengthen each other towards the fulfilment of the right to privacy of individuals within and outside national borders in the EU.

4.2.2 The contributions of the European Data Protection Board

As a strong supplement plumbing the depths of the of the EU regulations just outlined, the EDPB has issued several guidelines depicting in detail how States are supposed to act whenever personal data are in jeopardy. Throughout the year 2020, it has been indicated that the data protection legal framework had been "designed to be flexible and as such, is able to achieve both an efficient response in limiting the pandemic and protecting fundamental human rights and freedoms"[531]. The EDPB recalls that location data collected from electronic communication providers may only be processed under Articles 6 and 9 of the ePrivacy Directive[532]. This means that any data can only be transmitted to authorities or other third parties if they have been anonymised

[527] Regulation (EU) 2018/1807, Art. 2.1(a)(b).
[528] Regulation (EU) 2018/1807, Art 2.2.
[529] Guideline of the European Commission, 29 May 2019, MEMO/19/2750, *on free flow of non-personal data - Questions and Answers*.
[530] Regulation (EU) 2018/1807, Art. 3.2.
[531] Guidelines 04/2020, para. 2.
[532] Directive (EU) 2002/58/EC.

by the provider or, for data indicating the geographic position of the terminal equipment of a user, which are not traffic data, with the prior consent of the users. In the specific context of a contact tracing application, the EDPB has claimed that careful consideration should be given to the principle of 'data minimisation' and 'data protection by design' and by 'default', meaning that:

> "(1) contact tracing apps do not require tracking the location of individual users. Instead, proximity data should be used;
> (2) as contact tracing applications can function without direct identification of individuals, appropriate measures should be put in place to prevent re-identification;
> (3) the collected information should reside on the terminal equipment of the user and only the relevant information should be collected when absolutely necessary"[533].

Moreover, the EDPB asserts that the world is facing a significant public health crisis that requires strong responses where:

> "Automated data processing and digital technologies can be key components in the fight against COVID-19. However, one should be wary of the 'ratchet effect'. It is our responsibility to ensure that every measure taken in these extraordinary circumstances are necessary, limited in time, of minimal extent and subject to periodic and genuine review as well as to scientific evaluation"[534].

Indeed, one should not decide between an efficient response to the crisis and the protection of fundamental rights. "European data protection law allows for the responsible use of personal data for health management purposes, while also ensuring individual rights and freedoms are not eroded in the process"[535]. In November 2020, the EDPB enhanced this framework issuing a specific recommendation for surveillance measures[536], containing four 'European Essential Guarantees' that:

> "[…] intend to further specify how to assess the level of interference with the fundamental rights to privacy and to data protection in the context of surveillance measures by public authorities in a third country, when transferring personal data, and what legal requirements must consequently apply in order to evaluate whether such interferences would be acceptable under the Charter"[537].

Following the assessment of the jurisprudence, the EDPB ponders the applicable legal requirements to make the limitations to the data protection and privacy rights reasonable and justifiable. In particular:

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[533] Guidelines 04/2020, para. 27.
[534] Guidelines 04/2020, para. 48.
[535] Guidelines 04/2020, para. 49.
[536] Recommendations 02/2020.
[537] Recommendations 02/2020, para. 23.

> "(1) Processing should be based on *clear*, *precise* and *accessible* rules; (2) *necessity* and *proportionality* with regard to the legitimate objectives pursued need to be demonstrated; (3) an *independent oversight* mechanism should exist; (4) *Effective remedies* need to be available to the individual (emphasis added)"[538].

The four 'European Essential Guarantees' are to be read as core elements to be found when evaluating the level of interference with the fundamental rights to privacy and data protection. They should not be assessed independently, as they are closely interwoven, yet universally, revising: (1) the relevant legislation in relation to surveillance measures; (2) the minimum level of safeguards for the protection of the rights of the data subjects; and (3) the remedies provided under the national law of the third country.

Clearly, these 'guarantees' need a certain degree of interpretation, particularly since the third country legislation does not have to match the EU legal framework. In the framework of the crisis triggered by COVID-19, the Statement published on 2 June 2020 deals with the restrictions on data subject rights in connection to the state of emergency in member States[539]. There, the EDPB recalls that "the European Commission, as Guardian of the Treaties, has the duty to monitor the application of EU primary and secondary law and to ensure its uniform application throughout the EU, including by taking actions where national measures would fail to comply with EU law"[540].

Finally, the EDPB Statement 03/2021 on the ePrivacy Regulation, adopted on 9 March 2021, constitute a decisive call for action to update the 2002 ePrivacy Directive[541], emphasising that the (forthcoming) regulation must under no circumstances lower the level of protection offered by the current ePrivacy Directive (which it will repeal and substitute), and must complement the GDPR by offering further guarantees for confidentiality and protection of all electronic communications[542]. In the light of the COVID-19 pandemic and the widespread smart apps gathering a great amount of data, it is of the utmost importance to agree upon a reasonable ePrivacy Regulation that would expand the existing consensus framework with an effective way in order for websites and mobile applications to obtain an actual individual consent of users.

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[538] Recommendations 02/2020, para. 24.

[539] Statement of the EDPB, 2 June 2020, *on restrictions on data subject rights in connection to the state of emergency in Member States*.

[540] Statement of the EDPB, 2 June 2020, on restrictions on data subject rights in connection to the state of emergency in Member States, para 17.

[541] Directive of the European Parliament and of the Council, 12 July 2002, 2002/58/EC, *concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)*.

[542] Statement 03/2021, p. 1.

4.2.3 The 2021 EU's ePrivacy Regulation and tracking cookies

The EU's ePrivacy Regulation to repeal and replace the 2002 ePrivacy Directive has been a long time expected. Initially scheduled to be finalised on the GDPR's enforcement date in May 2018[543], it has been postponed for years. On February 10, 2021, a draft document was agreed upon by the EU Council placing the ePrivacy Regulation on the top of the 2021 EU agenda[544]. As previously mentioned, the EU's data privacy regime currently consists of the GDPR and the ePrivacy Directive from 2002. So, the new ePrivacy Regulation will repeal and replace the older 2002 directive and bring considerable updates by incorporating new technologies in its legal framework[545]. Moreover, by encompassing all electronic communications (such as texts, emails, Facebook messages, SnapChat, etc.), the new regulation protects individuals in the EU from third-party intrusion into their private communication (unless they give prior consent)[546]. The ePrivacy Regulation 2021 is actually an overarching set of rules for at least for reasons: (a) it includes electronic communications on openly available services and networks, counting machine-to-machine data transmissions and metadata, such as location, time and data about recipients; (b) it concerns end-users located inside the EU, even if the service provider is located outside of the EU, and the processing takes place outside of the EU; (c) it defends all electronic communications as by default private and confidential (to process, listen, control or otherwise collect data about individuals' electronic communications inside the EU); (d) it requires an explicit consent from end-users for cookies and trackers[547]. What evidently acquires more relevance in the 2021 ePrivacy Regulation, comparing it to the 2002 ePrivacy Directive, is the supervision of tracking cookies[548] and their obtrusiveness on individuals' web search and location data.

But what is the variation between the ePrivacy Regulation and the GDPR? In brief, one may asset that the ePrivacy Regulation 2021 is conceived as a sector-specific law that would rule all electronic communications on openly available services and networks from individuals inside the EU, while the GDPR regulates the overall processing of personal data from individuals inside the EU. In this way, the ePrivacy Regulation 2021 would be a *lex specialis* to the GDPR *lex generalis*, identifying and listing the GDPR's

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[543] Regulation (EU) 2018/1807.

[544] Press release of the Council of Europe, 10 February 2021, 81/21, *Confidentiality of electronic communications: Council agrees its position on ePrivacy rules*.

[545] *Ibid*.

[546] Proposal of the European Parliament and of the Council, 10 February 2021, 6087/21, *for a Regulation concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC*.

[547] *Ibid*.

[548] Tracking cookies are text files dropped on browsers that can record data about the user of that specific browser, such as his or her actions on a site, browsing activity, purchases and preferences, IP address and geographical location.

personal data requirements to the electronic communications sector (i.e., smart apps).

4.3 Final remarks on eHealth and surveillance

The COVID-19 crisis is the first pandemic in which technology (i.e., AI and ML) can support the containment and mitigation of the infection and its implementation poses new challenges, as well as great opportunities[549]. In particular, "the variety of eHealth and mHealth applications may offer unprecedented possibilities for both patients and health professionals but raises major legal and regulatory issues"[550].

This chapter has illustrated that the use of location data to monitor the coronavirus outbreak has proven to be successful in improving the ability of governments and research institutions to tackle the issue more rapidly. Of course, it is important to mention that location data is not the only useful data being used to reduce the impact of the ongoing crisis. Genetic data can also be significant for AI examinations to discover vaccines and supervising online communication on social media platforms, thus being very relevant to keep an eye on peace and security[551]. Nevertheless, exploiting such large amount of data has demonstrated to work at its best when both individual freedom and collective autonomy are constrained in the name of a 'common good' (e.g., the need to protect health and guarantee security). For this reason, the risk of applying such data should preferably be mitigated through specific legal frameworks (beyond the GDPR) which identify the aim and goals of data usage, collection, analysis, storage and sharing, as well as the erasure of the information once insights have been extracted[552]. The recent EU guidelines for data protection have partially responded to the need of addressing human rights concerns raised against the obtrusiveness of digital technologies. Still, guidelines have just been echoing the general legal framework cherished by international human rights law. They have asserted once again that any infringement of human rights, such as the right to private life, must be in accordance with the law, necessary in a democratic society, pursuing a legitimate aim, and be proportionate in their application[553]. However, as revealed above, the general legal framework including human rights standards is, at present, not capable of safeguarding data protection sufficiently, since it tends to concentrate too much on the individual as first glance[554]. For this reason, it is recommendable to consider existing guidelines and standards for

[549] BANA, CHRISTOU, SACCO (2020: 21)
[550] DEN EXTER (2016: 230).
[551] TAULLI (2020).
[552] ZWITTER, GSTREIN (2020: 5).
[553] European Convention on Human Rights (formally the Convention for the Protection of Human Rights and Fundamental Freedoms), Rome, 4 November 1950, Art. 8.2.
[554] ZWITTER, GSTREIN (2020: 5).

accountable data use not only on human rights grounds, but in any field: from the humanitarian sphere, to corporate and academic. After the pandemic, instead of promoting individual self-care, which is inclined to negatively change the expectations of people's own privacy and collective autonomy, States should agree upon specific rules and constraints for the use of digitalised tools. Especially those which are developed mainly to collect, use, and store personal data for 'greater purposes', as contact tracing apps.

In order to promote a practical, permissible, and effective implementation of data-driven responses for the COVID-19 pandemic, as well as for future global health threats, one should now propose a number of suggestions. First, data sensitivity has proven to be highly circumstantial: one and the same data can be sensitive in different environments. Location data for the period of pandemic might be very useful for present and future epidemiological assessments. Nevertheless, if exploited to recalibrate political powers, data can be open for misappropriation. Therefore, any party providing data and data testing needs to check whether data and understandings can be altered in the situation they are submitted. Second, privacy and data protection are fundamental values: they do not vanish during a crisis. Still, they must be weighed against relevant benefits and risks. Third, data-violations are almost inevitable: "with time approaching infinity, the chance of any system being hacked or becoming insecure approaches 100%. Hence, it is not a question of whether, but when"[555]. Consequently, organisations should arrange reasonable and feasible data preservation and data removal policies (beyond the GDPR). Four, data ethics is to be considered a duty to deliver high quality analysis: using machine learning and big data might be attractive for the moment, but the quality of source data may be low, and results might be inaccurate, or even damaging. Biases in incomplete datasets, algorithms and human users are ample and considered too broadly. One must not ignore that in times of crisis, the risk of bias is more probable and more challenging due to the vulnerability of data subjects and groups. For this reason, working to the highest standards of data processing and assessment is an ethical and vital prerequisite. The observance of these principles is evidently of utter importance in times of crisis such as now, where values and ideologies mark the border between societies that rely on control and repression, and those who believe in freedom and independence. Eventually, one will need to agree upon incorporating data policies into the general legal framework and into the specific regulations applicable during states of emergency. Also, a coordinate approach among States with corporate stakeholders and private organisations to decide how to overcome such crises is clearly recommended. Data-driven procedures must be used in a responsible manner. For this aim, it will be essential to observe whether data processes and digital surveillance mechanisms introduced under the current context will be rolled back to *status quo ante* when restoring normality. If not, human rights and individual freedoms will be set aside,

[555] ZWITTER, GSTREIN (2020: 6).

simply waiting for the next crisis to finally become irrelevant. As Benjamin Franklin once said: "Any society that would give up a little liberty to gain a little security will deserve neither and lose both"[556]. And the interplay between eHealth and surveillance will just end up deleting what makes individual different: our private life.

[556] FRANKLIN (1725).

Chapter V
Dealing with the aftermath of COVID-19

> "*Sharing is Caring […] I truly believe that if we have no path but the right path, the best path, then that would present a kind of ultimate and all-encompassing relief. […] I'm a believer in the perfectibility of human beings. I think we can be better. I think we can be perfect or near to it. And when we become our best selves, the possibilities are endless. […] We can cure any disease, end hunger, everything, because we won't be dragged down by all our weaknesses, our petty secrets, our hoarding of information and knowledge. We will finally reach our full potential*"[557].
>
> Dave Eggers, *The Circle*

The COVID-19 crisis has demonstrated that any measure, including contact-tracing strategies (digital or otherwise), can only be efficient if accompanied by a great deal of effort of both health authorities and the social community. This implies engaging the whole population to increase trust and compliance with digital measures practices and solutions, as well as to enhance global awareness and understanding.

One the one hand, the discovery and administration of vaccines against SARS-CoV-2 has instilled hope in the year 2021 and onwards. On the other hand, though, there is still much to achieve, especially in the non-medical field, where the legal and humanistic response to the pandemic is still on the agenda. It is now, in fact, that countries are facing the critical part of the pandemic: balancing between maintaining the current situation (of curbed transmissions) and going forwards in the promotion of an effective recovery. Now more than ever, States aiming at avoiding further infections and finally overcoming the impasse caused by COVID-19, are required to take a joint action to promote solidarity, consciousness, and a sustainable upswing.

According to the WHO Regional Office for Europe, insisting on the EU multiple risk communication and community engagement ('RCCE')'s activities, perspectives and principles is fundamental to see the effectiveness of States' limitative measures and efforts in the long run[558]. In contact tracing, as in the pandemic reaction overall, effective RCCE guarantees that:

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[557] EGGERS (2013:162)

[558] WHO REGIONAL OFFICE FOR EUROPE (2021:1).

> "[1] trust is maximized between responders and key target audiences; [2] communities, especially those that are marginalized, are included and at the heart of planning, implementation and evaluation of response efforts;
> [3] people have the information they need to make decisions about their health;
> [4] feedback and listening data from the community are used in designing solutions (for contact tracing and the pandemic response overall);
> [5] health-protective behaviours are maximized"[559].

In 2020, trust was not taken for granted. Each government had to prove its ability to domestically respond to an international emergency at its maximum available resources, balancing between what it deemed essential and what was necessary and proportionate for the State and its inhabitants. As the previous chapters have illustrated, transnational cooperation and coordination have played a crucial role in the EU. Transnational collaboration and mutual support (including data sharing) have proven to be a practical and effective option to face a challenge that knows no territorial borders. Indeed, one may claim that it has been a sort of 'probationary period'. Obviously, it is in the future that one will see the results, whether beneficial or compromising, of the normative implications of new technologies applied throughout the crisis, as well as the ethical codes and regulation determining how biomedical research should be conducted when human rights are involved.

These final pages are intended to draw a conclusion from COVID-19 as regards international organisation and human rights. This chapter begins by claiming that the recent extension of Big Data has affected human rights and, thus, international law should consider the employment of a blended approach to address this matter (Section 5.1). By believing that 'balancing' is the only way to surmount a global issue without triggering further breaches on human rights, the analysis proceeds by exploring the possibility to revisit the derogation clause provided for by law in order to allow States (and individuals) to behave proportionately between a 'modern concept of rights' and a 'traditional perception of duties' (Section 5.2). Considering derogation as a 'last resort', Section 5.3 indicates the alternative of a 'proportionately balancing', for limitative measures, as well as for digital technologies and surveillance tools supporting States' in the fulfilment of their obligations. In this direction, States should avoid that the current implementation of AI procedures and eHealth leads to a deadlock undermining the full enjoyment of personal freedoms (i.e., a sort of ratchet effect) (Section 5.4). Section 5.5 proposes to use 'gamification' to improve individual self-awareness and safety, based on Rambøll's 'Check-act-learn' method, which has been developed to promote good behaviours in workplaces to avoid contagions. Then, Section 5.6 analyses the potential that soft law (i.e., guidelines, recommendations, declarations, and opinions), albeit not binding, has had on EU Member States, including its reputation, use (Section 5.6.1) and

[559] *Ibid.*

attractiveness (Section 5.6.2). To conclude this work, Section 5.7 underlines the need to agree upon an international treaty on pandemic prevention and preparedness which could foster collective solidarity at the global level. Political leaders have already united in an urgent call (Section 5.7.1). Still, a 'One Health' approach requires more accountability, shared responsibility, and cooperation. The EU has been supporting these ideas on the principles of fairness, inclusiveness, and transparency (Section 5.7.2). Given this, a legally binding instrument under the WHO would enable countries throughout the globe to reinforce national, regional, and global capacities and resilience to future pandemics (Section 5.7.3). As Section 5.7.4 recommends, such an instrument should clear all the doubts being raised during the COVID-19 pandemic. In international organisation and human rights to foresee signifies to be prepared.

5.1 Big Data's blended approach in IHRL

'Big data' is a term that has been widely used by the media and the public for the last several years[560]. While there is no unique definition, according to some authors:

> "The common denominator seems to include the 'three V's' – volume (vast amounts of data), variety (significant heterogeneity in the type of data available), and velocity (the speed at which a data scientist or user can access and analyse the data). Some would add a fourth 'V' of value, the idea that Big Data would allow us to improve healthcare"[561].

The first issue entails an understanding of the new technologies and their implications for health and society at large: after the pandemic, what will change and what will remain the same? Health and biomedicine have been particularly affected by the application of Big Data, AI, and ML in 2020 and in previous years. As described in the former chapters, mobile phone data have been used for contact tracing and public health surveillance to detect human mobility, revealing their utility during the outbreak of an infectious disease. A second issue involves the normative implications of these new digital tools that collect, process, personalise and store a great amount of individual data. On the one hand, States applying AI and data-driven mechanisms to respond to the pandemic have been opening to promising paths in health and biomedicine. On the other hand, though, they have been increased the challenges that Big Data constitutes for traditional approaches, as well as for prevailing social norms, and existing regulatory schemes regarding autonomy, privacy, identity, and other principles. As already underlined, ethical codes and international regulations dictate how the developments of new digital tools should be conducted when they involve (and affect) human subjects,

[560] COHEN, LYNCH, VAYENA, GASSER (2018: 1).
[561] *Ibid.*

their samples, and their data. Even if, and especially because, for certain data processing is difficult to anticipate the outcome on individual rights (i.e., black-box algorithms), States should be the only actors entitled to manage these activities. Although, clearly, they may require the support of third-party experts.

The pandemic has made evident that, apart from national strategies, blended approaches that combine different instruments are more likely to succeed when dealing with both the challenges and possibilities of Big Data associated with technologies, in healthcare as in other fields. Regarding the various functions that international laws and regulations can play, one should point out that they represent a great contribution to problem solving by allowing States to level the different interests that social actors confront within their territorial borders. However, the familiar (and often dominant) role of international legal norms may also represent a 'constraint on behaviour', for both States and individuals, especially when there is a public emergency requiring a quick response. For COVID-19, the requirement to publicly denounce the restrictions imposed on human rights, under the alleged ECHR, has partially blocked the technological advancements that could benefit the health of individuals and society at large.

The legal framework described in chapter two has portrayed the multiple obligations that States have on the behalf of both their population and the international community, especially when they undertake measures limiting the enjoyment of fundamental freedoms. Such obligations lay out some key principles guiding and 'constraining' States' action, requiring the assessment of necessity, time-boundedness, precaution, proportionality, and transparency for any procedure out of the ordinary. To this direction, chapter three has considered the recalibration that human rights witnessed during emergencies, especially when health is the main public concern. Security and health are two faces of the same coin, and the development of digital technology should work as a strong support in healthcare, in the general policy making and, of course, in the promotion of individual self-awareness. Considering the implications of eHealth and surveillance tools for the right to private life, international regulations, directives, and non-binding (still relevant) guidelines guarantee that the use of digital technology aimed at reaching a higher standard of human rights does not end up clashing with their realisation. In this context, the final remarks expressed in chapter four have emphasised the need to agree upon data policies into the general legal framework. Moreover, the idea of a coordinated (and regulated) collaboration between governments and corporate stakeholders and private organisations developing smart tools would ensure that handling a great amount of personal data do not constitute a breach of individual rights.

All these matters require a blended approach to Big Data and IHRL, encompassed by both the conventional legal framework and some new perspectives raised during the outbreak of COVID-19 (i.e., a more dynamic

approach to human rights). Including Big Data Management[562] in IHRL would signify mixing various event-based activities. The obvious advantage of a blended approach is that "it enables to maximise effectiveness by matching the best medium for each involved object"[563].

5.2 Revisiting Article 15 ECHR between a 'modern concept of rights' and a 'traditional perception of duties'

Looking at single governments' response to COVID-19, it is feasible to claim that the default mode has been a sort of 'subsumption', that is, the application of old rules to new phenomena. As soon as the WHO declared COVID-19 a world pandemic[564], certain States have publicly (and rapidly) resorted to Article 15 ECHR[565], which reads that:

> "1. *In time of* war or other *public emergency threatening the life of the nation* any *High Contracting Party may take measures derogating from its obligations* under [the] Convention to the extent strictly *required by the exigencies of the situation*, provided that such measures are not inconsistent with its other obligations under international law.
> 2. No derogation from Article 2, except in respect of deaths resulting from lawful acts of war, or from Articles 3, 4 (§ 1) and 7 shall be made under this provision.
> 3. Any High Contracting Party availing itself of this right of derogation shall *keep the Secretary General of the Council of Europe fully informed of the measures* which it has taken and *the reasons* therefore. It shall also inform the Secretary General of the Council of Europe when such measures have ceased to operate and the provisions of the Convention are again being fully executed (emphasis added)"[566].

This article constitutes an explicit derogation clause which "affords to Contracting States, in exceptional circumstances, the possibility of derogating, in a limited and supervised manner, from their obligations to secure certain rights and freedoms under the Convention"[567].

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[562] Big Data Management ('BDM') may be considered a broad concept, since it encompasses the policies, procedures and technology used for the collection, storage, organisation, and delivery of large repositories of data. The idea behind of BDM, ensuring a high level of data quality and accessibility for business intelligence and big data analytics applications, and may be applicable to any tools handling individuals' personal data.
[563] HARVEY (2017).
[564] Transcript of the World Health Organization, 11 March 2020, *Virtual press conference on COVID-19*.
[565] LUGARÀ (2020).
[566] European Convention on Human Rights (formally the Convention for the Protection of Human Rights and Fundamental Freedoms), Rome, 4 November 1950, Art. 15.
[567] Guide of the Council of Europe, 31 August 2020, *on Article 15 of the European Convention on Human Rights – Derogation in time of emergency*, para. 1.

The ECtHR has not been required to interpret the meaning of 'war' in Article 15.1[568]. Still, the natural and customary meaning of 'public emergency threatening the life of the nation' clearly refers to "an exceptional situation of crisis or emergency which affects the whole population and constitutes a threat to the organised life of the community of which the State is composed"[569]. The Court's case-law has never, to date, openly included the requirement that the emergency be temporary and, indeed, several cases demonstrate that it is possible for a 'public emergency' within the scope of Article 15 to continue for many years[570]. Today, this may rise concerns about the scope and extent of the limitative measures applied for COVID-19. The question is whether States are allowed to derogate certain human rights until a World Health Assembly ('WHA') will declare the complete defeat of SARS-CoV-2 and its variants, or at least the non-existence of a public emergency threatening the life of the people.

It is important to say that, during COVID-19, the use of Article 15 ECHR has presented several elements of novelty. First, the number of countries[571] resorting to it has marked a new trend compared to the moderate recourse made in the previous practice[572]. Second, the nature and extent of the threat, a health-related issue, has constituted a different public emergency compared to the cases in which limitations on human rights under Article 15 ECHR have been historically grounded (i.e., highly political phenomena, such as the fight against terrorism or the progress of an armed conflict). Third, the growing relevance assumed by various experts from the scientific, technological, statistical, and medical community throughout the process of design and implementation of emergency measures, has entailed a new multidimensional response that cannot be equally observed in the previous practice[573]. Finally, the constant sharing of information and the increased exchange of personal data allowing to compare diverse measures adopted in different countries has been an opportunity not conceivable with respect to the events deeply related to the historical and cultural context of individual States (i.e., those customarily associated with Article 15 ECHR).

This time, the rapid resort to the derogation, the extension of rights and freedoms involved, and the amount of emergency measures[574], leads to reflect on the nature of such derogations. Some have claimed that derogations and

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[568] Guide of the Council of Europe, 31 August 2020, *on Article 15 of the European Convention on Human Rights – Derogation in time of emergency*, para. 7.

[569] Judgement of the European Court of Human Rights, 1 July 1961, 332/57, *Lawless v. Ireland (no. 3)*, para. 28.

[570] Judgements of the European Court of Human Rights, 18 January 1978, 5310/71, *Ireland v. the United Kingdom*; 26 May 1993, 14553/89, *Brannigan and McBride v. the United Kingdom*; 10 July 2001, 41571/98, *Marshall v. the United Kingdom*; 19 February 2009, 3455/05, *A. and others v. the United Kingdom*.

[571] BINDER et al. (2020).

[572] LUGARÀ (2020: 371).

[573] GREENE (2020: 15).

[574] LUGARÀ (2020: 372).

limitations during the COVID-19 pandemic, albeit without casting a shadow over the EU legislation, have entailed a different, and less invasive, application of the principle of proportionality as required for threats to public security during war times[575]. As outlined in the former chapters, conventional rights that may be subject to derogation already contain explicit or implicit limitation clauses that let States interfere with fundamental freedoms (in case of a serious threat or of a public emergency). Therefore, resorting to Article 15 ECHR should remain limited to exceptional cases and considered as a 'last resort'. For COVID-19, though, the automatic recognition of States' large margin of appreciation to restrict a number of human rights (e.g., the freedom of movement) covered by the derogation, as well as a flexible interpretation of the procedural requirements, may trigger the normalisation of the use of Article 15 ECHR. Hereafter, one may risk that any measure limiting human rights will bypass the severe scrutiny of the CoE[576]. However, it is precisely in moments of crisis that fundamental rights and freedoms are most threatened and, therefore, in need of effective control instruments[577]. For this reason, one should consider the possibility to revisit Article 15 ECHR to allow States to behave proportionately between a 'modern concept of rights' and a 'traditional perception of duties', thereby avoiding their direct resort to a general (and serious) derogation clause. As suggested by the adjectives, on the one hand, a 'modern concept of rights' would entail promoting a more dynamic and accommodating response to human rights-related issues, allowing States and individuals to act differently, yet in a cooperative manner, according to the specific circumstances. And, on the other hand, a 'traditional perception of duties' would safeguard the application of customary (and so recognised) rules to new phenomena (i.e., 'subsumption'), therefore respecting the obligations enshrined in international human rights law.

5.3 Derogating vs proportionate balancing

If derogations are to be considered 'a last resort', a feasible and proportionate balancing between a 'modern concept of rights', dynamic and adaptable, and a 'traditional perception of duties', historic and solid, may help to outreach present boundaries and shortcomings in the application of international human rights law. For instance, the constraints imposed to the development of a rapid and (un)obtrusive response to a public threat (e.g., the use of digital technology tools to monitor individuals' behaviour).

In general, the debate around the future use of contact tracing apps and artificial intelligence as a support for policy-making, underlines the necessity of keeping the role of humans in controlling that rational algorithms do not result in unfairness and biases and, thus, increase discrimination. Such a

[575] *Ibid.*
[576] *Ibid.*
[577] CARVER (2020: 248).

necessity is common for several high-tech solutions implemented for primary needs, not only in the sphere of public security or public health. Despite the pros and cons of 'digitalising human rights', it is important to recall its relevance in the present context, where there is an actual risk that a public emergency would end up with a push back in the level of protection of the fundamental rights involved. Some human rights experts have claimed that individual rights have been better protected in those countries that have resorted to Article 15 ECHR, thereby officially derogating from international human rights mechanisms[578]. In doing so, experts argue, governments have clearly separated the state of emergency from normalcy and hence they have limited in time the measures being adopted to fight the pandemic[579]. But then, have they restored the *status quo*? Although it may be true that *est modus in rebus*, in the aftermath of COVID-19, resorting to the derogation clause in case of a public emergency should be avoided and substituted by specific mechanisms of conduct globally recognised, which would better safeguard human rights within and outside national borders (i.e., an international treaty for public health emergencies).

Creating and employing technical solutions that are not precisely developed considering the boundaries of a specific legal framework could generate a 'ratchet effect' and irreversible consequences in the future of international human rights law[580]. The lack of transparency, knowledge, and control over how personal data is collected, used, and stored online is likely to provoke widespread feelings of mistrust and reluctancy for the *status quo post* pandemic. In short, it would be a further step towards unregulated digital technologies and the materialisation of a sort of 'surveillance realism' in which mass control is not only normalised, but even perceived as inevitable.

5.4 How to avoid the ratchet effect

A ratchet effect is an instance of the restrained ability of human processes to be reversed once a specific event has happened, just as the mechanical ratchet holding the spring tight as the clock is wound up. Normally, it is associated with the phenomena of manufacturing goods, or with the military planning. In sociology, ratchet effects refer to "the tendency for central controllers to base next year's targets on last year's performance, meaning that managers who expect still to be in place in the next target period have a perverse incentive not to exceed targets even if they could easily do"[581]. A ratchet theory as part of a broad interpretation of governmental growth was firstly explained by Robert Higgs in his "Crisis and Leviathan"[582], where he conceived that most

[578] DZEHTSIAROU (2020).
[579] *Ibid*.
[580] CIRONE (2020).
[581] BEVAN, HOOD (2006: 521).
[582] HIGGS (1987).

progresses occurred in response to real or triggered national crises and that after the crises, some, but hardly all, of the new interferences ceased[583].
By considering that "extraordinary situations call for extraordinary measures"[584], governments have been forced to impose limitations as part of the actions addressing the threat to public health and security. Yet, as described, strong measures are inherent to States' obligations to respect, to protect, and to fulfil human rights under historical conventions and treaties. For the COVID-19 pandemic, one may refer to the ratchet effect as the impasse that the world will be likely to face if we do not consider the uniqueness of this crisis. To put it another way, if it is right to look at the past to be ready for the future, by simply doing so for the recent pandemic, we risk reducing the scope of the human dimension of the events occurred from the beginning of the outbreak. The ratchet effect, here conceived as the likelihood to address future global crisis on the grounds established in the present, may provoke the following scenario: (1) single States will be the main actors determining what has to be done within their borders, even if guided and constrained by international standards protecting human rights – having a large margin of appreciation; (2) 'Balancing' among different interests, remaining mainly a State concern, would entail involving only specific groups in policy-making, so some kind of 'elitarism' will decide what it is more suitable for the majority; (3) Disparity of resources would result in unfairness of treatments and, as a consequence, discrimination and raising inequality within States (e.g., minority groups) and across national borders (e.g., among poor countries and rich countries).
To prevent these three-negative outcomes from becoming real, the guidelines issued by the EU, together with the recommendations of specialised agencies of the UN, are just a beginning for a general and beneficial recovery. Security risk management and artificial intelligence applied in healthcare to curb the spread of COVID-19, accomplished through the boundaries of the GDPR and the ePrivacy Directive, have largely assisted member States in developing and implementing new digital mechanisms which gather and store individual and population data. Still, one should remind that, on the one hand, the EU security policy[585] was already used in the past to tackle health threats become security issues [586]. On the other hand, the exceptionality of the dynamic trend of the COVID-19 disease (with its asymptomatic cases and variants) calls for a new interpretation of 'security', in terms of sustainable growth and human rights enjoyment.

[583] *Ibid*.
[584] TZEVELEKOS, DZEHTSIAROU (2020: 143).
[585] Intended as the EU Common Foreign and Security Policy and mainly applied for security and defence diplomacy and actions.
[586] CHOFFNES et al. (2007).

5.5 Check-act-learn: a proposal to use gamification to improve safety

In the recent years, in many fields there has been a growing tendency to apply typical elements of game playing (e.g., point scoring, competition with others, rules of play) in daily activities. 'gamification': "a process of enhancing services with motivational affordances in order to invoke 'gameful' experiences and further behavioural outcomes […], invoking the same psychological experiences as games do"[587]. From this perspective, one may open the possibility to use of gamification in the aftermath of the COVID-19 pandemic. Regarding digital smart apps (early described for contact tracing), gamification can be conceived as a technique to encourage awareness and understanding. Private and public authorities could employ gamification via smart apps, developed by both tech specialists and human rights experts, to prevent the mentioned ratchet effect from being witnessed. Simply, by allowing individuals to play their own game. Some have argued that "gamification can let people choose to participate in the activities that are a high priority to them and forgo those that are not, [so] it can provide people with a budget of social contacts to manage themselves"[588]. As countries move away from total lockdowns, contact tracing is likely to remain a key part to reduce transmissions. So, one may want to consider the potential of gamification for individual self-awareness and safety. Enterprise architects and technology innovation leaders may be let to consider smart apps that focus on gamification as a way to promote specific and appropriate behaviours, as hand washing or social distance. These appropriate behaviours should include: (1) social distance; (2) good hygiene; and (3) screening. For social distancing, apps could provide a 'score' for how well a user minimised contact with others and reward points for actions like visiting the grocery store during off-peak hours or having a walk in the park with friends versus sitting down for dinner in crowded restaurant. When it comes to hygiene, apps could notify people to wash their hands every two hours or offer 'gifts' for sterilising door handles or using hand sanitiser. Finally, for screening, apps may reward low-risk individuals by allowing them to enter specific buildings (e.g., a gyms and restaurants) and recommend that those at a higher risk access only essential shops (e.g., grocery stores and pharmacies).

In this direction, the Danish consulting engineering group "Rambøll" has launched two new apps, which facilitate infection prevention in different working environment (i.e., office spaces and construction sites). The apps take advantage of gamification to replicate everyday situations in work environments, where users can then verify whether they are properly acting to avoid contagion[589]. The approach of these apps is called "Check-act-learn" and has already been applied with positive results in the company's 3D

[587] HAMARI, KOIVISTO, SARSA (2014: 2).
[588] BURKE (2020).
[589] RAMBØLL (2020).

gamification solution to improve safety on construction sites[590]. The main idea behind the use of gamification to deal with the aftermath of COVID-19 is that virtual reality, in which individuals play with the reproduction of their daily life, foresees potential situations, and thus help people to identify the actions they should take in precise circumstances. In this way, gamification leads people to behave more safely, in a work environment, as well as in their daily routine. Key features of the prevent infection apps are the use of game elements and game-centred learning, combined with the specific health and safety country guidelines. The Rambøll apps that have already been implemented can also be adjusted to other countries COVID-19 guidelines and local conditions[591]. Similarly, through contextual building design, the office app can be adapted to any office environment internationally[592].

Following the example given by Denmark, countries seeking to reduce restrictions and re-establish normalcy should consider the possibility to exploit smart apps to better share information and increase awareness about how to act safely in public spaces. Indeed, smart apps with a strong focus on encouraging good hygiene and safe social distance will have a positive impact on the general economy and the society at large. Four potential obstacles are considered and addressed as follows. (1) Not everyone has a smartphone, but a less expensive Bluetooth tracker could be used instead of a smartphone. (2) Delivering equitable access to buildings and transportation for those who are forced to daily interact with people (e.g., healthcare workers and policemen) could constitute a problem whose solution would be giving them an 'infinite health', so they can access to basic services (since their higher risk is due to a public cost rather than a personal option). (3) Privacy concerns can be mitigated through privacy by design principles i.e., an approach that considers privacy and data protection issues at the design phase of any system, service, product, or process and then throughout the lifecycle. (4) As gamification measures have a considerable impact on daily routines, transparency in the inputs given to algorithms that calculate risk and suggest decisions is essential to guarantee people's trust in digitalisation and AI applications in healthcare, safety, and surveillance. In particular:

> "Data protection by design aims to build data protection and privacy into the design of processing operations and information systems, in order to comply with data protection principles. Organisations are required to take into account the protection of the rights of individuals, both before and during their processing activities, by implementing the appropriate technical and organisation measures to ensure that they fulfil their data protection obligations. […]"[593].

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[590] RAMBØLL (2021a).
[591] RAMBØLL (2021b).
[592] *Ibid*.
[593] Guidelines of the EDPB, 20 October 2020, 4/2019, *Data Protection by Design and by Default*, p. 4.

Mentioned data protection principles are, indeed, to be found in the GDPR[594], the 2002 ePrivacy Directive[595] and the draft of the 2021 ePrivacy Regulation[596], supported by the guidelines of the EDPB[597].
At this point, it should be clear that technology will provide the most feasible solution for responsive measures, including contact tracing and quarantine enforcement. Still, one should also remember that designing gamification apps as a pre-emptive measure adjusting people's behaviours will always been constrained by the international regulations early described, as well as what the following paragraph describes as 'soft law'.

5.6 Soft law to prevent human rights violations

The term 'soft law' refers to "quasi-legal instruments that have no [official] legal force, such as non-binding resolutions, declarations, and guidelines created by governments and private organizations"[598]. Here we are mainly considering 'soft law' within the sphere of international law.

5.6.1 The international reputation and use of soft law

In the context of international law, the term 'soft law' may cover elements such as most resolutions and declarations of the UN General Assembly, statements, principles, and codes of practice or certain action plans (for example, the 2020 Communication to the European Parliament and the Council on Human Rights and Democracy[599])[600].

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[594] Regulation (EU) of the European Parliament and of the Council, 27 April 2016, 2016/679, *on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)*.
[595] Directive of the European Parliament and of the Council, 12 July 2002, 2002/58/EC, *concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).*
[596] Statement of the EDPB, 9 March 2021, 03/2021, *on the ePrivacy Regulation*; Proposal of the European Parliament and of the Council, 10 February 2021, 6087/21, *for a Regulation concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC*.
[597] Guidelines of the EDPB, 21 April 2020, 03/2020, *on the processing of health data for research purposes in the context of the COVID-19 outbreak*; Guidelines of the EDPB, 21 April 2020, 04/2020, *on the use of location data and contact tracing tools in the context of the COVID-19 outbreak*; Statement of the EDPB, 2 June 2020, *on restrictions on data subject rights in connection to the state of emergency in Member States*; Recommendations of the EDPB, 10 November 2020, 02/2020, *on the European Essential Guarantees for surveillance measures*; Statement of the EDPB, 9 March 2021, 03/2021, *on the ePrivacy Regulation*; Guidelines of the EDPB, 13 April 2021, 03/2021, *on the application of Article 65(1)(a) GDPR.*
[598] DRUZIN (2016: 361).
[599] Joint Communication of the European Commission, 23 March 2020, JOIN/2020/5 final, *EU Action Plan on Human Rights and Democracy 2020-2024*.
[600] LAGOUTTE, GAMMELTOFT-HANSEN, CERONE (2016: 23-24).

In the EU, soft law instruments are often used to indicate how the European Commission intends to exercise its powers and perform its tasks within its area of competence[601]. On the other hand, the resolutions and recommendations of the Council are also soft law[602]. By contrast, the EU regulations or directives are legally binding, albeit the second leaves member States discretion as to how to achieve the result[603]. Finally, the conventions of the Council are also legally binding, but only for those countries ratifying them[604]. Developing soft law instruments may be considered a sort of compromise within the international legal system because the idea of a 'non-binding document' is more likely to be accepted by governments reluctant to commit the whole States to specific mandatory goals. Nevertheless, soft law holds much potential for transforming into 'hard law', especially in security regulation[605]. This 'hardening' of soft law may occur in two different ways. First, when declarations, recommendations, etc. are the first phase of a treaty-making process (which will refer to the principles already indicated in the soft law instruments)[606]. Second, soft law may become binding when non-treaty agreements are signed with the purpose of exerting direct influence on States' practice[607]. Their success will likely determine the conversion of soft law into customary law. Undoubtedly, a key aspect of soft law is its flexibility. By avoiding the direct and rigid commitment of treaties, States are gradually led to commit themselves to legal obligations, perhaps only for a good reputation. In this direction, aspiring non-commitments easily catch the imagination of the civil society who will eventually believe that soft law instruments as if they were legal instruments.

Soft law has been used significantly in many fields. First, in international environmental law, where States tend to be reluctant to commit to strict environmental programs when balancing between the environment against economic and social goals[608]. Second, in international economic law and international sustainable development law, as well as in human resource management matters, such as gender equality, diversity, and other topics (e.g., health and safety)[609]. Finally, in the society at large, while defined 'binding' legislations may leave space for discretion and interpretation, 'soft law' can be used by stakeholders on their suppliers to avoid confusion.

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601 SCHÜTZE (2018: 76-118).
602 *Ibid*.
603 LAMDINI (2020).
604 SCHÜTZE (2018: 85).
605 KARMEL, KELLY (2009: 886-905).
606 *Ibid*.
607 *Ibid*.
608 ANDORNO (2007).
609 *Ibid*.

5.6.2 The law of attraction

Soft law is attractive because it often contains ambitious goals that aim for the best of future scenarios[610]. However, the scope and extent of many soft law documents may overlap with existing legal commitments and be potentially duplicative of existing legal or policy norms[611]. Despite its 'smoothness', relying on soft law may create a sort of 'testing ground' for new, innovative, and perhaps efficient ideas for the upcoming policymaking activities. As the several guidelines analysed in the previous pages may suggest, the response to the COVID-19 pandemic has largely been promoted throughout soft law mechanisms. Indeed, States have been bound by recognised legal obligations enshrined in conventional treaties and international law. Yet, they have extensively been guided by soft law throughout their decision-making processes, especially to remind the proportionality and necessity of limitative measures and the requirements to gather, use, and store personal data of individuals and population for contact tracing[612].

At present, balancing between individual rights and general interests is a task whose outcome may largely depend on individuals and States' adherence to soft law instruments. Nevertheless, non-binding mechanisms in Europe, as in other parts of the world, have revealed the necessity to agree upon a global binding and defined agreement which could go beyond the simple observance of soft law. In order to prepare and encourage a universal and collective solidarity, in line with the principles of fairness, inclusiveness, and transparency, the following pages are going to discuss the establishment of an international pandemic treaty[613].

5.7 Towards an international pandemic treaty

As already mentioned, the discovery and administration of vaccines against SARS-CoV-2 has instilled hope in the year 2021. Nevertheless, there is still much to accomplish, especially in the non-medical field, where the legal and

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[610] DRUZIN (2016: 375).

[611] LAGOUTTE, GAMMELTOFT-HANSEN, CERONE (2016: 24-28).

[612] Interim guidance of the World Health Organization, 16 December 2020, WHO/2019-nCoV/SurveillanceGuidance/2020.8, *Public health surveillance for COVID-19*.

[613] Being the topic of this work a topical argument, a lot has happened while the previous chapters were being written. The proposal for an international treaty on pandemics was first announced by the President of the European Council, Charles Michel, at the Paris Peace Forum in November 2020. In January 2021, when the present work was firstly conceived, there was no document concerning the upcoming drafting of an actual internationally binding treaty for the COVID-19 public health emergency and for future pandemics. However, in the last months the decision-making body of the WHO has engaged to discuss the topic at the 74th World Health Assembly taking place from 24 May 2021 to 31 May 2021. Since an official and unique document will not be available in time for the publishing of this dissertation, the following section is based on previous research. Still, some references will be made to the declared agenda, proposed programmes, and some reports retrievable on the official website of the WHO. As stated, the central theme is that of ending the pandemic and preventing the next (building together a healthier, safer, and fairer world).

humanistic answer to the pandemic is still on the agenda. For the future, States must be better prepared to foresee, prevent, identify, assess, and efficiently respond to pandemics and health emergencies in a highly coordinated manner. To that end, nations should come together and work together towards a new international treaty for pandemic preparedness and response propagating the notion of collective solidarity, consistent with the principles of equality, non-discrimination, and transparency. For present concerns and future reactions.

5.7.1 Global leaders united in an urgent call

On 30 March 2021, twenty-five heads of State and government joined the President of the European Council, Charles Michel, and the Director-General of the WHO, Tedros Adhanom Ghebreyesus, in an open call for the creation of an international pandemic treaty which would enhance global capacity to predict and quickly react to pandemic threats[614]. After a year of balancing between individual rights and collective interests within national borders, such a renewed collective commitment constitutes a milestone to establish pandemic preparedness at the highest political level. Existing global health instruments, however, should not be put aside. In a way resembling the 2005 International Health Regulations, customary conventions and previous legal practice should strengthen such a treaty, so as to guarantee a firm and recognised basis on which States can build and improve. No one left behind. In particular, the main purpose of the proposed international pandemic treaty should be to foster an overarching approach involving governments and society, reinforcing national, regional, and global capabilities and resistance to other public health emergencies. To this aim, the treaty should significantly envisage the enhancement of international assistance in order to improve and control all those mechanisms that, being applied during the pandemic, have evidently affected human rights (i.e., alert systems, data-sharing, research, and delivery of medical and public health defences, such as vaccines, medicines, diagnostics and protective equipment).

The pandemic treaty should centre on human rights. "States have all-too-easily side-lined the international human rights framework under cover of emergency responses"[615], and this should be avoided in the future. According to some, the treaty should recall the severe harms on human rights witnessed throughout the pandemic (e.g., authoritarian powers, monopolies in diagnostics and therapeutics, setbacks for women, and violence), to then address the single issues on the basis of the core principles enshrined in IHRL[616]. Therefore, establishing a global set of rules and procedures that any

[614] Press release of the Council of the European Union, 30 March 2021, 246/21, *COVID-19 shows why united action is needed for more robust international health architecture - Op-ed article by President Charles Michel, WHO Director General Dr Tedros Adhanom Ghebreyesus and more than 20 world leader*s.

[615] DAVIS (2021).

[616] *Ibid*.

State should recognise and follow. The extent of the COVID-19 disease has demonstrated that in present time what begins as a national problem hardly remains a national issue. The very few cases of 'pneumonia of unknown cause' firstly discovered in Wuhan City, were soon detected in other bordering areas. Has the spread stopped in China? No, indeed. Having the pros to speed up movements and exchanges (of human beings, goods, and services, capital, technologies, or cultural practices), globalisation all over the planet has now disclosed its cons. The promotion and the increasing of interactions between different regions and populations around the globe has turned out to trigger bad consequences. In this framework, a 'One Health' approach connecting the health of humans, animals, and our planet, is clearly necessary. A foreseeable pandemic treaty should thus lead to more mutual accountability and shared responsibility, transparency, and cooperation within the international system and with its rules and norms:

> "At a time when COVID-19 has exploited our weaknesses and divisions, we must seize this opportunity and come together as a global community for peaceful cooperation that extends beyond this crisis. Building our capacities and systems to do this will take time and require a sustained political, financial and societal commitment over many years"[617].

5.7.2 EU support to establish an international treaty

At the European Council of 25 February 2021 EU leaders highlighted the need for global multilateral cooperation to tackle current and future health risks and decided to work on an international treaty on pandemics within the WHO framework and to improve global health security[618]. On 20 May 2021, the Council approved a decision to endorse the negotiations for an international treaty on the fight against pandemics[619]. As this section is being written, the World Health Assembly ('WHA'), the main governing body of the WHO, is discussing the establishment of a process for a framework convention on pandemic preparedness and response during its meeting held virtually from 24 May to 31 May 2021. As stated in a press release, the intent of the Council decision aims at guaranteeing the participation of the EU in the negotiations involving matters falling within Union competence, in view of the Union's potential accession to the pandemic treaty[620]. The plan to conclude a treaty on pandemics should, however, be discussed in the framework of a blended

[617] Press release (EU), 246/21.
[618] Press release of the European Council, 20 May 2021, 375/21, *EU supports start of WHO process for establishment of Pandemic Treaty: Council decision*.
[619] *Ibid*.
[620] *Ibid*.

approach and international efforts to strengthen global health security, for both preparedness and response to health emergencies[621].

5.7.3 Why a treaty?

A treaty is a legally binding written instrument under international law[622]. An international treaty on pandemics agreed under the WHO would enable countries throughout the globe to reinforce national, regional, and global capacities and resilience to future pandemics. Neither single governments nor the general community can totally foresee the outbreak of epidemics. For this reason, the international community should be better prepared and aligned in answering to potential global health threats across the entire sequence of detection, alarm, and response. The recommended treaty should thus set out the purposes and fundamental norms to follow in order to shape the collective action required to counteract pandemics. In this direction, an international treaty on pandemics should focus and rely on: (1) early detection and prevention of health related issues; (2) resilience to future health threats; (3) response to future global health related problems, in particular by guaranteeing universal and equitable access to medical care (i.e., vaccines, medicines and diagnostics); (4) a greater international health structure with the WHO as the main authority managing global health matters; and (5) the 'One Health' approach, uniting the health of humans, animals and the planet.

5.7.4 Holding onto the heritage of human rights

An international binding treaty should aim at clarifying all the doubts being raised for more than a year. In order to ensure transparency, it is recommended to promote the practice of risk monitoring and data sharing, by increasing laboratory surveillance and collaboration among research institutes in all countries, not only within States or regions. Introducing more steps of alert and improving algorithms' precision would enhance transparency and trust in AI-driven mechanisms in healthcare, as well as in other fields. A binding pandemic treaty should thus encompass all the existing regulations in matters of data protection (i.e., the GDPR, the ePrivacy Directive and the EDPB Guidelines) to establish rules of procedures which could be updated as new technologies develop. In this framework, independently from their national capabilities, all countries should have open access to essential materials,

[621] Without going into detail, one should mention the Global Health Summit held in Rome on 21 May 2021. There, G20 leaders made several decisions as regards the end of the emergency and the preparation for a future pandemic. The adoption of the Rome Declaration, laying down sixteen shared and cross-sectoral principles, has started the process of collaboration that is essential for an effective recovery. However, the values (such as solidarity, use of scientific evidence, and listening to diverse actors) have been welcomed, it is not easy to combine them with the real commitments, targets, specific timeframes, and States' available resources. The lack of hard obligations, outlined by the 'voluntary nature' of the Declaration, emphasises one more time the need to lay down the law through a binding treaty.

[622] HENRIKSEN (2019: 23).

medicines, and equipment. A worldwide coordinated approach to detect, develop, and distribute effective and safe medical solutions would definitely promote health and safety[623]. For instance, the sharing of biological samples and genomic data, together with the development of appropriate medical solutions, may ensure an effective global pandemic preparedness. Regarding algorithmic unfairness and biases, the treaty should clarify the importance of the Access to COVID-19 Tools Accelerator ('ACT-A')[624], COVAX[625] and the other collective mechanisms experimented in the past months. This would allow States to undertake a more proportionate (and perhaps fair) balancing between individuals rights and collective interests, within and outside their borders. A foreseeable pandemic treaty should lay down the foundation to enhance truthful information and to promote 'good behaviour' globally. As illustrated by Section 5.5, 'gamification', by reproducing work office settings and promoting a check-act-learn strategy, could constitute an innovative tool to encourage 'healthier' and 'safer' conducts (i.e., social distance, good hygiene, and screening). To this purpose, virtual reality may educate people on the potential and dangers of the interplay between eHealth and surveillance. The acknowledgement of personal freedoms as enshrined in human rights law today has been, indeed, the result of a long practice of positive thinking and courageous action. Still, huge steps forward must be taken. International organisation and human rights are fields in which 'to stand still' means 'to retreat'. Therefore, one should hold onto the heritage and pass it on to the generations to come. To respect, to protect, and to fulfil the enjoyment of personal freedoms of every individual and peoples in every country.

[623] PAN-EUROPEAN COMMISSION ON HEALTH AND SUSTAINABLE DEVELOPMENT (2021: 12).
[624] The Access to COVID-19 Tools Accelerator is an innovative global collaboration to accelerate development, production, and equitable access to COVID-19 tests, treatments, and vaccines including governments, scientists, businesses, civil society, and global health organisations (e.g., Bill and Melinda Gates Foundation, The Global Fund, the WHO, etc.).
[625] COVAX is the vaccines pillar of the ACT Accelerator.

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Bibliography

ACADEMY OF ROYAL MEDIC COLLEGES (2019), *Artificial Intelligence in Healthcare*, London.

ADAMS (2016), *Use of social media by hospitals and health authorities*, in SYED-ABDUL, GABARRON, LAU (eds.), *Participatory Health Through Social Medial*, London, pp. 27-41.

ADAMS, PURTOVA, LEENES (2017), *Under Observation: The Interplay Between eHealth and Surveillance*, Cham (Switzerland).

AEROASTROMIT (2014). *One-on-one with Elon Musk*, in *youtube.com*, available *online*.

AKANDJI-KOMBE (2007), *Positive obligations under the European Convention on Human Rights. A guide to the implementation of the European Convention on Human Rights*, in *Human rights handbooks*, 7, available *online*.

ALBRIGHT, WILLIAMSON (2013), *The United States and R2P: from words to action*, in *the United States Institute of Peace*, in *usip.org*, available *online*.

ALTWICKER (2018), *Transnationalizing Rights: International Human Rights Law*, in *Cross-Border Contexts*, in *European Journal of International Law*, 29, 2, pp. 581-606.

ANDERSON, HEESTERBEEK, LINKENBERG, HOLLINGSWORTH (2020), *How will country-based mitigation measures influence the course of the COVID-19 epidemic?*, in *The Lancet*, 395, 10228, pp. 931-934.

ANDORNO (2007), *The Invaluable Role of Soft Law in the Development of Universal Norms in Bioethics*, in *unesco.de*, available *online*.

ARIAS-MALDONADO (2020), *COVID-19 as a Global Risk: Confronting the Ambivalences of a Socionatural Threat*, in *Societies*, 10, 4, p. 92.

BABBITT (2009), *The Evolution of International Conflict Resolution: From Cold War to Peacebuilding*, in *Negotiation Journal*, 25, 4, pp. 539–549.

BANA, CHRISTOU, SACCO (2020), *Digital Contact Tracing for the COVID-19 Epidemic: A Business and Human Rights Perspective*, London.

BASTOS, DE RUIJTER (2019), *Break or bend in case of emergency? Rule of law and state of emergency in European public health administration*, in *European Journal of Risk Regulation*, 10, 4, pp. 610–634.

BEVAN, HOOD (2006), *What's Measured Is What Matters: Targets and Gaming in the English Public Health Care, System*, in *Public Administration*, 84, 3, pp. 517-538.

BIGNAMI (2020), *Chiacchiericcio sulle libertà costituzionali al tempo del coronavirus*, in *Questione Giustizia*, available *online*.

BILDER (2010), *An Overview of International Human Rights Law*, in HANNUMM (ed.), *Guide to International Human Rights Practice*, Madison, pp. 3-18.

BINDER, CREGO, DEL MONTE, ECKERT, KOTANIDIS, MANKO (2020), *States of emergency in response to the coronavirus crisis: Situation in certain Member States*, in *europarl.europa.eu*, available *online*.

BINI (2018), *Artificial Intelligence, Machine Learning, Deep Learning, and Cognitive Computing: What Do These Terms Mean and How Will They Impact Health Care?*, in *Journal Arthroplasty*, 33, 8, pp. 2358-2361.

BORAK (2020), *Chinese police now have AI helmets for temperature screening*, in *Abacus*, available *online*.

BOUADMA, CASALINO, CHOQUET, ESCAMPS, GERARD, JACQUES, KHALIL, LESCURE, LUCET, MAISANI, PEIFFER-SMADJA, TIMSIT, YAZDANPANAH (2020), *Challenges and issues about organizing a hospital to respond to the COVID-19 outbreak: experience from a French reference centre*, in *Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases*, 26, 6, pp. 669–672.

BOULOS, GERAGHTY (2020), *Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: how 21st century GIS technologies are supporting the global fight against*

outbreaks and epidemics, in *International Journal of Health Geographics*, 19, 8, pp. 1-12.

BROWN (2018), *IBM Watson reportedly recommended cancer treatments that were 'unsafe and incorrect'*, in *Gizmodo*, available *online*.

BUCAN (2013), *International Law and the Construction of the Liberal Peace*, Oxford.

BUDD (2020), *Digital technologies in the public-health response to COVID-19*, in *Nature Medicine*, 26, 8, pp. 1183-1192.

BUIJSEN, EXTER DEN (2010), *Equality and The Right to Health Care*, in DEN EXTER (eds.), *Human Rights and Biomedicine*, Antwerp, pp. 69-85.

BURKE (2020), *Gamification Can Flatten the COVID-19 Curve*, in *gartner.com*, available *online*.

BURLACU , CRISAN-DABIJA, COVIC , RAIU, MAVRICHI, POPA, LILLO-CRESPO (2020), *Pandemic lockdown, healthcare policies and human rights: Integrating opposed views on COVID-19 public health mitigation measures*, in *Reviews, Cardiovascular Medicine*, 21, 4, pp. 509-516.

BYRSELL, CLAESSON, RING, FORSBERG, HOLLENBERG, NORD (2021), *Machine learning can support dispatchers to better and faster recognize out-of-hospital cardiac arrest during emergency calls: A retrospective study*, in *Resuscitation Journal*, 162, pp. 218-226.

CAHN, VEISZLEMLEIN (2020), *COVID-19 tracking data and surveillance risks are more dangerous than their rewards*, in *nbcnews.com*, available *online*.

CALVO, DETERDING, RYAN (2020), *Health surveillance during COVID-19 pandemic, How to safeguard autonomy and why it matters*, in *the British Medical Journal*, 369, 1373, pp. 1-2.

CARVER (2020), *Forum: Human rights practice in the Age of pandemic*, in *Journal of Human Rights Practice*, 12, 2, pp. 247-249.

CAVE, WHITTLESTONE, NYRUP, O HEIGEARTAIGH, CALVO (2021), *Using AI ethically to tackle COVID-19*, in *the British Medical Journal*, 372, 364, pp. 1-3.

CENTRE FOR DISEASE CONTROL AND PREVENTION (2021), *Different COVID-19 Vaccines*, in *cdc.gov*, available *online*.

CHUN (2020), *In a time of coronavirus, China's investment in AI is paying off in a big way*, in *scmp.com*, available *online*.

CIRONE (2020), *L'app italiana di contact tracing alla prova del GDPR: dall'habeas data al ratchet effect il passo è breve?*, in *Sidiblog*, available *online*.

COCO, DIAS (2020), *Part I: Due Diligence and COVID-19: States' Duties to Prevent and Halt the Coronavirus Outbreak*, in *ejiltalk.org*, available *online*.

COHEN (2018), *Petrie-Flom Center launches project on Precision Medicine, Artificial Intelligence, and the Law (PMAIL). ,* in *Harvard Law Today*, available *online*.

COHEN, LYNCH, VAYENA, GASSER (2018), *Big data, health law, and bioethics*, Cambridge.

CONFORTI, FOCARELLI (2016), *The Law and Practice of the United Nations*, Leiden.

CONSELHO NACIONAL DE ÉTICA PARA AS CIÊNCIAS DA VIDA (2020), *Public Health Emergency due to the COVID-19 pandemic: relevant ethical aspects*, Lisbon.

COUNCIL OF EUROPE (2020), *Statement on Freedom of expression and information in times of crisis by the Council of Europe's Committee of experts on media environment and reform (MSI-REF)*, in *coe.it*, available *online*.

COUNCIL OF EUROPE (2021), *Guide on Article 13 of the European Convention on Human Rights - Right to an effective remedy*, in *echr.coe.int*, available online.

CRIDDLE, FOX-DECENT (2012), *Human Rights, Emergencies, and the Rule of Law*, in *Human Rights Quarterly*, 34, 1, pp. 39-66.

DAGRON, FORMAN, MEIER, SEKALALA (2020), *Analyzing the Human Rights Impact of Increased Digital Public Health Surveillance during the COVID-19 Crisis*, in *Health and Human Rights Journal*, 22,2, pp. 7-20.

DAVIDSON (2020), *Around 20% of Global Population under Coronavirus Lockdown*, in *theguardian.com*, available *online*.

DAVIS (2021), *An International Pandemic Treaty Should Centre on Human Rights*, in *blogs.bmj.com/*, available *online*.

DAWSEY, HARRIS, MILLER, NAKASHIMA (2020), *U.S. intelligence reports from January and February warned about a likely pandemic*, in *thewashingtonpost.com*, available *online*.

DE CAMPOS (2020), *Guiding Principles of Global Health Governance in Times of Pandemics: Solidarity, Subsidiarity, and Stewardship in COVID-19*, in *The American Journal of Bioethics*, 20, 7, pp. 212-214.

DE LA TORRE (2019), *The 'right to an explanation' under EU data protection law*, in *medium.com*, available *online*.

DE RUIJTER (2017), *Mixing EU security and public health in the health threats decision*, in DE RUIJTER, WEIMER (Eds.), *EU risk regulation, expert and executive power*, Amsterdam, pp. 101–120.

DELLA MORTE (2020), *La tempesta perfetta Covid-19, deroghe alla protezione dei dati personali ed esigenze di sorveglianza di massa*, in s*idiblog.org*, available *online*.

DEN EXTER (2016), *Ehealth law: The final frontier*, in *European Journal of Health Law*, 23, 3, pp. 227-230.

DEN EXTER (2017), *The Right to Healthcare under European Law*, in *Diametros*, 51, pp. 173-95.

DEWS (2013), *What is the responsibility to protect?*, in *brookings.edu*, available *online*.

DIJKSTRA, DE RUIJTER (2017), *The health-security nexus and the European Union: Toward a research agenda*, in *European Journal of Risk Regulation*, 8, 4, pp. 613-625.

DOSWALD-BECK (2011), *Human Rights in Times of Conflict and Terrorism*, Oxford.

DRUZIN (2016), *Why does Soft Law have any Power anyway?*, in *Asian Journal of International Law*, 7, pp. 361-378.

DUDDEN, MARKS (2020), *South Korea Took Rapid, Intrusive Measures against Covid-19 and They Worked*, in *theguardian.com*, available *online*.

ECKMANNS, FÜLLER, ROBERTS (2019), *Digital epidemiology and global health security; an interdisciplinary conversation*, in *Life Sciences, Society and Policy*, 15, 2, pp. 1-13.

EGGERS (2013), *The Circle: A Novel*, New York.

ELBE (2006). *Should HIV/AIDS be securitized? The ethical dilemmas of linking HIV/AIDS and security*, in *International Studies Quarterly*, 50, 1, pp. 119-144.

ELFLEIN (2021), *Number of new cases of coronavirus (COVID-19) in the United States from January 20, 2020 to March 14, 2021, by day*, in *statista.com*, available *online*.

ENGLE (2009), *The History of the General Principle of Proportionality: An Overview*, in *the Dartmouth Law Journal*, 10, 1, pp. 1-11.

EREBARA (2020), *Albania Announces New 'War' Measures against Coronavirus*, in *balkaninsight.com*, available *online*.

EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL (2021), *COVID-19 situation update worldwide*, in *ecdc.europa.eu*, available *online.*

EUROPEAN COMMISSION (2021), *Ethics guidelines for trustworthy AI*, in *digital-strategy.ec.europa.eu*, available *online*.

EUROPEAN LAW INSTITUTE (2020), *ELI Principles for the COVID-19 Crisis*, Vienna.

EVANS, MARGO LINDAUER, FARRELL (2020), *A Pandemic within a Pandemic — Intimate Partner Violence during Covid-19*, in *The New England Journal of Medicine*, 383, 24, p. 2302-2304.

EVENSTAD (2018), *DeepMind Health must be transparent to gain public trust, review finds*, in *computerweekly.com*, available *online*.

FABBRINI (2015), *The Margin of Appreciation and the Principle of Subsidiarity: A Comparison*, in *iCourts Working Paper Series*, 15, pp. 1-17.

FERRETTI, WYMANT, KENDALL, LELE ZHAO, NURTAY, ABELER-DÖRNER, PARKER, BONSALL, FRASER (2020), *Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing*, in *American Association for the Advancement of Science*, 368, 619, pp. 1-8.

FIDLER (2004), *Germs, governance, and global public health in the wake of SARS*, in *The Journal of Clinical Investigation*, 113, 6, pp. 799-804.

FINK (2000), *Minority Rights as an International Question*, in *Contemporary European History*, 9, 3, pp. 385-400.

FINNIS (2011), *Natural Law and Natural Rights*, Oxford, II ed.

FISHER, CARSON (2020), *Back to basics: the outbreak response pillars*, in *The Lancet*, 396, 10251, p. 598.

FORMAN, BEIERSMANN, BROLAN, MCKEE, HAMMONDS, OOMS (2016), *What do core obligations under the right to health bring to universal health coverage?*, in *Health and Human Rights Journal*, 18, 2, pp. 23-34.

FORMAN, KOHLER (2020), *Global health and human rights in the time of COVID-19: Response, restrictions, and legitimacy*, in *Journal of Human Rights*, 19, 5, pp. 547–556.

FORMAN, OOMS, BROLAN (2015), *Rights language in the Sustainable Development Agenda: Has right to health discourse and norms shaped health goals?*, in *International Journal of Health Policy and Management*, 4, 12, pp. 799-804.

FORNI, MANTOVANI (2021), *COVID-19 vaccines: where we stand and challenges ahead*, in *Cell Death & Differentiation*, 28, 2, pp. 626-639.

FOUCAULT (1973), *The Birth of the Clinic*, London.

FRANKLIN (1725), *A dissertation on liberty and necessity*, London.

GARCIANDIA (2020), *State responsibility and positive obligations in the European Court of Human Rights: The contribution of the ICJ in advancing towards more judicial integration*, in *Leiden Journal of International Law*, 33, 1, pp. 177-187.

GASSER, IENCA, SCHEIBNER, SLEIGH, VAYENA (2020), *Digital tools against COVID-19: taxonomy, ethical challenges, and navigation aid*, in *The Lancet Digital Health*, 2,8, pp. 425-434.

GE, TIAN, HUANG et al. (2020), *A data-driven drug repositioning framework discovered a potential therapeutic agent targeting COVID-19*, in *biorxiv.org*, available *online*.

GERARDS, GLAS (2017), *Access to justice in the European Convention on Human Rights system*, in *Netherlands Quarterly of Human Rights*, 35, 1, pp.11–30.

GERKE (2018), *The EU's GDPR in the Health Care Context*, in *blog.petrieflom.law.harvard.edu*, available *online*.

GERKE, MINSSEN, COHEN (2020), *Ethical and legal challenges of artificial intelligence-driven healthcare*, in *Artificial Intelligence in Healthcare*, available *online*, pp. 295–336.

GIACCA (2014), *Economic, Social, and Cultural Rights in Armed Conflict*, Oxford.

GOMEZ ISA (2015), *The Reversibility of Economic, Social and Cultural Rights in Crisis Contexts*, in *Teisė*, 940, pp. 234-240.

GOODMAN (2021), *Year of COVID: Everything We Thought We Knew Was Wrong*, in *Medscape.com*, available *online*.

GOODMAN, FLAXMAN (2017), *European Union regulations on algorithmic decision making and a "Right to Explanation"*, in *AI Magazine*, 38, 3, pp. 50-57.

GÖSSLING, HALL, SCOTT (2020), *Pandemics, tourism and global change: a rapid assessment of COVID-19*, in *Journal of Sustainable Tourism*, 29, 1, pp. 1-20.

GOSTIN (2017), *The "Great" Generation and a Not-So-Great Health System*, in *Milbank Quarterly*, 95, 4, pp. 698-701.

GOSTIN, LAZZARINI (1997), *Human Rights and Public Health in the AIDS Pandemic*, Oxford.

GREENE (2020), *Derogating from the European Convention on Human Rights in Response to the Coronavirus Pandemic: If not Now, When?*, in *European Human Rights Law Review*, 3, pp. 1-17.

GREER, FAHY, ROZENBLUM, JARMAN, PALM, ELLIOTT, WISMAR (2019), *Everything you always wanted to know about European Union health policies but were afraid to ask*, Copenhagen.

HALPERN (2020), *State obligations under public international law during pandemics*, in *Emory International Law Review*, 35, pp. 1-15.

HAMARI, KOIVISTO, SARSA (2014), *Does Gamification Work? — A Literature Review of Empirical Studies on Gamification*, in *researchgate.net*, available *online*.

HARARI (2020), *The world after coronavirus*, in *ft.com*, available *online*.

HARRIS, WYATT, WATHEN (2010), *Configuring Health Consumers: Health Work and the Imperative of Personal Responsibility*, Houndmills.

HARVEY (2017), *Big Data Management*, in *datamation.com*, available *online*.

HAYES (1992), *Healthcare as a natural right*, in *Medicine & Law*, 11, pp. 405-416.

HENRIKSEN (2019), *International Law*, Oxford, II ed.

HIGGS (1987), *Crisis and leviathan: Critical episodes in the growth of American government*, New York.

HOLLAND, MASON (2020), *Trump says he will invoke wartime act to fight 'enemy' coronavirus*, in *reuters.com*, available *online*.

HOPKINS (2021), *COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University*, in *systems.jhu.edu*, available *online*.

HUANG et al. (2020), *Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China*, in *The Lancet*, 395, 10223, pp. 497-506.

HUNT, MACNAUGHTON (2007), *Human Rights-Based Approach to Health Indicators*, in BADERIN, MCCORQUODALE (eds.), *Economic, Social, and Cultural Rights in Action*, Oxford, pp. 303-330.

INSTITUTE FOR HEALTHCARE IMPROVEMENT (2004), *Improving the Reliability of Health Care*, Cambridge.

JAMNEJAD, WOOD (2009), *The Principle of Non-intervention*, in *Leiden Journal of International Law*, 22, 2, pp. 345-381.

JI, XIANG, BONATO, LOVELL, OOI, CLIFTON, AKAY, DING, YAN, MOK, FOTIADIS, ZHANG (2021), *Recommendation to Use Wearable-Based mHealth in Closed-Loop Management of Acute Cardiovascular Disease Patients During the COVID-19 Pandemic*, in *Biomedical and Health Informatics IEEE Journal*, 25, 4, pp. 903-908.

JOSEPH (2020), *COVID 19 and Human Rights: Past, Present and Future*, in *Journal of International Humanitarian Legal Studies*, 20, 3, pp. 1-11.

JUMPER, TUNYASUVUNAKOOL, KOHLI, HASSABIS et al. (2020), *Computational predictions of protein structures associated with COVID-19*, in *deepmind.com*, available *online*.

KÄLIN, KÜNZLI (2009), *The Law of International Human Rights Protection*, Oxford.

KAMBAS, MALTEZOU, PAPADIMAS (2020), *PM Says Greece At War with 'Invisible Enemy' Coronavirus*, in *reuters.com*, available *online*.

KARMEL, KELLY (2009), *The Hardening of Soft Law in Securities Regulation*, in *Brooklyn Journal of International Law*, 34, 3, pp. 881-951.

KARP (2020), *What is the responsibility to respect human rights? Reconsidering the 'respect, protect, and fulfill' framework*, in *International Theory*, 12 , 1, pp. 83-108.

KIRSCHNER (2010), *Healthcare Transparency – Focus on Price and Clinical Performance Information*, Philadelphia.

KLUGMAN, DUNN , SCHWARTZ, COHEN (2018), *The ethics of smart pills and self-acting devices: autonomy, truth-telling, and trust at the dawn of digital medicine*, in *The American Journal of Bioethics*, 18, 9, pp. 38-47.

KOPPESCHAAR, COLIZZA, GUERRISI, TURBELIN, DUGGAN, EDMUNDS, KJELSØ, MEXIA, MORENO, MELONI, PAOLOTTI,

PERROTTA, VAN STRATEN, FRANCO (2017), *Influenzanet: Citizens Among 10 Countries Collaborating to Monitor Influenza in Europe*, in *JMIR Public Health and Surveillance*, 3, 3, p. 66.

LAGOUTTE, GAMMELTOFT-HANSEN, CERONE (2016), *Tracing the Roles of Soft Law in Human Rights*, Oxford.

LAMDINI (2020), *Understanding the difference between EU Directives and EU Regulations*, in *certification-experts.com*, available *online*.

LARDINOIS (2020), *IBM, Amazon, Google and Microsoft partner with White House to provide compute resources for COVID-19 research*, in *techcrunch.com*, available *online*.

LAURENT (2020), *COVID-19 : des États utilisent la géolocalisation pour savoir qui respecte le confinement*, in *usebkerica.com*, available *online*.

LEE, RESNICK, BARTON (2019), *Algorithmic bias detection and mitigation: Best practices and policies to reduce consumer harms*, in *brookings.edu*, available *online*.

LEMARIE (2020), *Extraordinary times call for extraordinary measures: the use of music to communicate public health recommendations against the spread of COVID-19*, in *Canadian Journal of Public Health*, 111, 4, pp. 477-479.

LEMARIE, PIETRALUNGA (2020), *Nous sommes en guerre: face au coronavirus, Emmanuel Macron sonne la mobilisation générale*, in *lemonde.fr*, available *online*.

LIANG, TSUI, NI et al. (2019), *Evaluation and accurate diagnoses of pediatric diseases using artificial intelligence*, in *Nature Medicine*, 25, 3, pp. 433-438.

LONDON (2019), *Artificial intelligence and black-box medical decisions: accuracy versus explainability*, in *Hastings Center Report*, 49, 1, pp. 15-21.

LUGARÀ (2020), *Emergenza sanitaria e articolo 15 CEDU: perché la Corte europea dovrebbe intensificare il sindacato sulle deroghe ai diritti fondamentali*, in *Osservatorio Costituzionale*, 3, pp. 341-373.

MCDONALD (2019), *The Role of Due Diligence in International Law*, in *International and Comparative Law Quarterly*, 68, 4, pp. 1041-1054.

MONTEIRO (2019), *First GDPR fine in Portugal issued against hospital for three violations*, in *iApp,org*, available *online*.

MORI (2020), *COVID-19, misure emergenziali e Stato di diritto*, in *Coronavirus e diritto dell'Unione*, in *aisdue.eu*, pp. 13-20.

MÜLLER (2009), *Limitations to and Derogations from Economic, Social and Cultural Rights*, in *Human Rights Law Review*, 9, 4, pp. 557–601.

MURPHY (2020), *COVID-19 - Proportionality, Public Policy and Social Distancing*, Singapore.

NALIN (2020), *COVID-19 e deroghe e restrizioni alla Convenzione europea dei diritti dell'uomo*, in *Studi sull'integrazione europea*, 10, 3, pp. 629-647.

NASEEM, AKHUND, ARSHAD, IBRAHIM (2020), *Exploring the Potential of Artificial Intelligence and Machine Learning to Combat COVID-19 and Existing Opportunities for LMIC: A Scoping Review*, in *Journal of Primary Care & Community Health*, 11, pp. 1-11.

NEVES-SILVA, MARTINS, HELLER (2019), *Human rights' interdependence and indivisibility: a glance over the human rights to water and sanitation*, in *BMC International Health and Human Rights*, 19, 14, pp. 1-8.

NOZIK (1974), *Anarchy, State, and Utopia*, New York.

NUFFIELD COUNCIL ON BIOETHICS (2018), *Artificial intelligence (AI) in healthcare and research*, London.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (2000), *Trust in Government: Ethics Measures in OECD Countries*, Paris.

OVERLY (2020), *White House seeks Silicon Valley help battling coronavirus*, in *politico.com*, available *online*.

PAN-EUROPEAN COMMISSION ON HEALTH AND SUSTAINABLE DEVELOPMENT (2021), *Rethinking Policy*

Priorities in the light of Pandemics – A Call to Action, Copenhagen.

PARKER (2020), *Ethics of instantaneous contact tracing using mobile phone apps in the control of the COVID-19 pandemic*, in *Journal of Medical Ethics*, 46, 7, pp. 427-431.

PERSAD, EMANUEL (2020), *The Ethics of COVID-19 Immunity-Based Licenses ("Immunity Passports"),* in *the Journal of the American Medical Association*, 323, 22, pp. 2241–2242.

POLLARD (2020), *Even mask-wearers can be ID'd, China facial recognition firm says*, in *reuters.com*, available *online*.

POOLE, MACKWORTH, GOEBEL (1998), *Computational Intelligence*, New York.

POWELL (2020), *Health: AI revolution in medicine*, in *news.harvard.edu*, available *online*.

PURNHAGEN, DE RUIJTER, FLEAR, HERVEY, HERWIG (2020), *More competences than you knew? The web of health competences for Union action in response to the COVID-19 outbreak*, in *European Journal of Risk Regulation*, 11, 2, pp. 297-306.

QIAN, SCHULLER, YAMAMOTO (2021), *Recent Advances in Computer Audition for Diagnosing COVID-19: An Overview*, in *Life Sciences and Technologies*, pp. 181-182.

RAMBØLL (2021), *New app to prevent spread of infection on building sites*, in *ramboll.com*, available *online*.

RAMBØLL (2021a), 3*D-gamification universe prevents on-site accidents*, in *ramboll.com*, available *online*.

RAMBØLL (2021b), *ForeBYG Smitte*, in *ramboll.com*, available *online.*

RAMIREZ (2020), *What Is R0? Gauging Contagious Infections*, in *healthline.com*, available *online*.

RATHEE, GARG, KADDOUM, WU, JAYAKODY, ALAMRI (2021), *ANN Assisted-IoT Enabled COVID-19 Patient Monitoring*, in *Access IEEE*, 9, pp. 42483-42492.

RATTAN (2019), *Changing Dimensions of Intervention Under International Law: A Critical Analysis*, in *Sage Open*, pp. 1-12.

ROMM, DWOSKIN, TIMBERG (2020), U.*S. government, tech industry discussing ways to use smartphone location data to combat coronavirus*, in *washingtonpost.com*, available *online*.

ROSS, SWETLITZ (2018), *IBM's Watson supercomputer recommended 'unsafe and incorrect' cancer treatments, internal documents show*, in *statnews.com*, available *online*.

RYAN (2020), *In defence of digital contact-tracing: human rights, South Korea and Covid-19*, in *International Journal of Pervasive Computing and Communications*, 16, 4, pp. 383-407.

SALEM (2020), *Proportionality of State Emergency Health Measures amid COVID-19*, in *opiniojuris.org*, available *online*.

SANTOSH (2020), *AI-driven tools for coronavirus outbreak: need of active learning and cross-population train/test models on multitudinal/multimodal data*, in *Journal of Medical Systems*, 44, 59, pp. 1-5.

SAUNDERS (2020), *COVID-19 and Human Rights, States' obligations and businesses' responsibilities in responding to the pandemic*, Oxford.

SCHABAS (2015), *The European Convention on Human Rights: A Commentary*, Oxford.

SCHÜTZE (2018), *European Union Law*, Cambridge, II ed.

SHORT (2018), *It turns out Amazon's AI hiring tool discriminated against women*, in *siliconrepublic.com*, available *online*.

SINHA (2013), *NSA surveillance since 9/11 and the human right to privacy*, in *Loyola Law Review*, 59, 4, pp. 861-946.

SIOW, LIEW, SHRESTHA, MUCHTAR, SEE (2020), *Managing COVID-19 in resource-limited settings: critical care considerations*, in *Critical Care*, 24, 167, pp. 1-5.

SOMMARIO (2018*), Limitation and Derogation Provisions in International Human Rights Law Treaties and Their Use in*

Disaster Settings, in ZORZI GIUSTINIANI, SOMMARIO, CASOLARI, BARTOLINI (eds.), *Routledge Handbook of Human Rights and Disasters*, Abingdon.

SOOMRO, ZHENG, AFIFI, ALI, GYN, GAO (2021), *Artificial intelligence (AI) for medical imaging to combat coronavirus disease (COVID-19): a detailed review with direction for future research*, in *Artificial Intelligence Review*, available *online*.

SPADARO (2020), *COVID-19: Testing the Limits of Human Rights*, in *European Journal of Risk Regulation*, 11, 2, pp. 317-325.

STIEG (2020), *How this Canadian start-up spotted coronavirus before everyone else knew about it*, in *cnbc.com*, available *online*.

TAMS (2005), *Enforcing Obligations Erga Omnes in International Law*, Cambridge.

TAULLI (2020), *Coronavirus: Can AI (Artificial Intelligence) Make A Difference?*, in *forbes.com*, available *online*.

TEBANO (2020), *Coronavirus, pronta la app italiana per tracciare i contagi: 'Così possiamo fermare l'epidemia'*, in *corriere.it*, available *online*.

TING, CARIN, DZAU et al. (2020), *Digital technology and COVID-19*, in *Nature Medicine*, 26, 4, pp. 459-461.

TOBIN (2012), *The Right to Health in International Law*, Oxford.

TZEVELEKOS, DZEHTSIAROU (2020), *Normal as Usual? Human Rights in Times of covid-19*, in *European Convention on Human Rights Law Review*, 1, 2, pp. 141-149.

UN OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS (2011), *Guiding principles for business and human rights, Implementing the United Nations "Protect, Respect and Remedy" Framework*, Geneva.

UN OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS (2013), *Individual Complaint Procedures under the United Nations Human Rights Treaties*, Geneva.

UNITED NATIONS CHILDREN'S FUND (2020), *UNICEF statement on COVID-19 outbreak - Characterizing COVID-*

19 as a pandemic is not an indication that the virus has become deadlier, in *unicef.org*, available *online*.

UPSHUR (2005), *Enhancing the legitimacy of public health response in pandemic influenza planning: Lessons from SARS*, in *The Yale Journal of Biology and Medicine*, 78, 5, pp. 335-342.

VAN KOLFSCHOOTEN (2019), *'Contact tracing' versus privacy bij ernstige grensoverschrijdende gezondheidsbedreigingen*, in *Privacy & Informatie*, 22, 2, pp. 43-48.

VAN KOLFSCHOOTEN, DE RUIJTER (2020), *COVID-19 and privacy in the European Union: A legal perspective on contact tracing*, in *Contemporary Security Policy*, 41, 3, pp. 478-491.

VARDHINI, PRASAD, KORRA (2021), *Medicine Allotment for COVID-19 Patients by Statistical Data Analysis*, in *IEE System Journal*, pp. 665-669.

VASWANI (2020), *Coronavirus: The detectives racing to contain the virus in Singapore*, in *bbc.com*, available *online*.

VINCENT (2018), *AI that detects cardiac arrests during emergency calls will be tested across Europe this summer*, in *theverge.com*, available *online*.

WACHTER, MITTELSTADT, FLORIDI (2017), *Why a right to explanation of automated decision-making does not exist in the general data protection regulation*, in *International Data Private Law*, 7, 2, pp. 76-99.

WACHTER, MITTELSTADT, RUSSELL (2018), *Counterfactual explanations without opening the Black Box: automated decisions and the GDPR*, in *Harvard Journal of Law and Technology*, 31, 2, pp. 842-887.

WATSON, JEONG, HOLLINGSWORTH, BOOTH (2020), *How this South Korean company created coronavirus test kits in three weeks*, in *cnn.com*, available *online*.

WHO REGIONAL OFFICE FOR EUROPE (2020), *Novel coronavirus emerges in China, Health Emergencies*, in *euro.who.int*, available *online*.

WHO REGIONAL OFFICE FOR EUROPE (2021), *Risk communication and community engagement for COVID-19 contact tracing: interim guidance*, Copenhagen.

WORLD HEALTH ORGANIZATION (2008), *WHO Guidance for the Use of Annex 2 of the International Health Regulations (2005), Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern,* in *who.int,* available *online.*

WORLD HEALTH ORGANIZATION (2017), *WHO Strategic Communications Framework for effective communications*, Geneva.

WORLD HEALTH ORGANIZATION (2018), *Managing epidemics: key facts about major deadly diseases*. Luxembourg.

WORLD HEALTH ORGANIZATION (2020a), *Considerations for implementing and adjusting public health and social measures in the context of COVID-19*, in *Institutional Repository for Information Sharing (IRIS), available* online;

ID. (2020b), *Responding to community spread of COVID-19: interim guidance*, Geneva;

ID. (2020c), *Digital tools for contact tracing annex: Contact tracing in the context of COVID-19*, Geneva;

ID. (2020d), *Considerations for implementing and adjusting public health and social measures in the context of COVID-19*, Geneva;

ID. (2020e), *WHO Manifesto for a Healthy Recovery from COVID-19 – Prescriptions and Actionables for a Healthy and Green Recovery*, Geneva.

WORLD HEALTH ORGANIZATION (2021), *Vaccines-explained*, in *who.int*, available *online*.

YU, BEAM, KOHANE (2018), *Artificial intelligence in healthcare*, in *Natural Biomedical Engineering*, 2, 10, pp. 719-731.

ZUBOFF (2019), *The age of surveillance capitalism: the fight for a human future at the new frontier of power*, New York.

ZWITTER, GSTREIN (2020), *Big data, privacy and COVID-19 – learning from humanitarian expertise in data protection*, in *Journal of International Humanitarian Action*, 5,1, pp. 1-7.

References

Additional Protocol to the Convention on Human Rights and Biomedicine concerning biomedical research, Strasbourg, 25 January 2005.

Charter of Fundamental Rights of the European Union, Nice, 7 December 2000.

Charter of the United Nations and Statute of the International Court of Justice, San Francisco, 26 June 1945.

Comment of the UNESCO Director-General on the Statement of the UNESCO International Bioethics Committee and the World Commission on Ethics of Scientific Knowledge and Technology, 6 April 2020, SHS/IBC-COMEST/COVID-19 REV, *on COVID-19: ethical considerations from a global perspective*.

Communication of the Commission of the European Communities, 2 February 2000, COM(2000)1, *Communication from the Commission on the precautionary principle*.

Communication of the EU Commission, 17 April 2020, C/2020/2523, *Guidance on Apps supporting the fight against COVID-19 pandemic in relation to data protection (2020/C 125/I/01)*.

Communication of the European Commission, 24 April 2018, COM(2018) 237 final, *Artificial intelligence for Europe*.

Communication of the European Commission, 8 April 2020, COM(2020) 148, *Communication from the Commission to the European Parliament, the European Council and the Council on the assessment of the application of temporary restriction on non-essential travel to the EU*.

Constitución Española, Madrid, 6 December 1978.

Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine, Oviedo, 4 April 1997.

Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (CETS No. 108), Strasbourg, 28 January 1981.

Convention on the Prevention and Punishment of the Crime of Genocide, Paris, 9 December 1948.

Costituzione della Repubblica Italiana, Roma, 22 December 1947.

Decision of the European Parliament and the Council, 22 October 2013, No. 1082/2013/EU, *on serious cross-border threats to health and repealing Decision No 2119/98/EC*.

Decision on the merits of the European Committee of Human Rights, 11 September 2012, *Complaint no. 67/2011, Médecins du Monde v France*.

Décret du Ministère des Solidarités et de la Santé, 30 Janvier 2021, 2021-99, *Décret modifiant les décrets n° 2020-1262 du 16 octobre 2020 et n° 2020-1310 du 29 octobre 2020 prescrivant les mesures générales nécessaires pour faire face à l'épidémie de COVID-19 dans le cadre de l'état d'urgence sanitaire*.

Delegated Regulation of the European Commission, 6 August 2020, C/2020/5473, *Amending Delegated Regulation (EU) 2018/985 as regards its transitional provisions in order to address the impact of the COVID-19 crisis*.

Directive of the European Parliament and of the Council, 12 July 2002, 2002/58/EC, *concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)*.

Document of the eHealth Network, 13 May 2020, *Interoperability guidelines for approved contact tracing mobile applications in the EU*.

Document of the eHealth Network, 15 April 2020, *Mobile applications to support contact tracing in the EU's fight against COVID-19 - Common EU Toolbox for Member States*.

Draft articles of the International Law Commission, November 2001, UN Doc. A/56/10 Supplement No. 10 chp.IV.E.1, *on Responsibility of States for internationally wrongful acts*.

European Code of Social Security, Rome, 6 November 1990.

European Convention on Human Rights (formally the Convention for the Protection of Human Rights and Fundamental Freedoms), Rome, 4 November 1950, Art. 1.

European Social Charter, Turin, 26 February 1965.

Explanatory Report of the Council of Europe, 24 January 2002, *No. 186, to the Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin*.

Explanatory Report of the Council of Europe, 25 January 2005, *No. 195, to the Additional Protocol to the Convention on Human Rights and Biomedicine, concerning Biomedical Research*.

General Comment of the UN Committee on Economic, Social and Cultural Rights, 2 July 2009, E/C.12/GC/20, *No. 20 on non-discrimination in economic, social and cultural rights*.

General Comment of the UN Committee on Economic, Social and Cultural Rights, 11 August 2000, E/C.12/2000/4, *No. 14 on the Right to the Highest attainable Standard of Health (Art. 12).*

General Comment of the UN Committee on Economic, Social and Cultural Rights 4 February 2008, E/C.12/GC/19, *No. 19 on the right to social security (Art. 9 of the Covenant)*.

General Comment of the UN Committee on Economic, Social and Cultural Rights, 14 December 1990, E/1991/23, *No. 3 on the Nature of States Parties' Obligations (Art. 2, Para 1, of the Covenant)*.

General Comment of the UN Committee on Economic, Social and Cultural Rights, 21 September 2007, E/C.12.2007/1, *An evaluation of the obligation to take steps to the "maximum of available resources" under an Optional Protocol to the Covenant.*

General Comment of the UN Human Rights Committee, 16 December 2014, CCPR/C/GC/35, *No. 35 on Article 9 (Liberty and security of person)*.

General Comment of the UN Human Rights Committee, 26 May 2004, CCPR/C/21/Rev.1/Add.13, *No. 31(80) on the Nature of the General Legal Obligation Imposed on States Parties to the Covenant*.

General Comment of the UN Human Rights Committee, 31 August 2001, CCPR/C/21/Rev.1/Add.11, *CCPR General Comment No. 29: Article 4: Derogations during a State of Emergency*.

Grondwet voor het Koninkrijk der Nederlanden, Den Haag, 22 September 2008.

Grundgesetz für die Bundesrepublik Deutschland, Berlin, 8 May 1949, Art. 2, 20.

Guide of the Council of Europe, 31 August 2020, *on Article 15 of the European Convention on Human Rights – Derogation in time of emergency*.

Guideline of the European Commission, 29 May 2019, MEMO/19/2750, *on free flow of non-personal data – Questions and Answers*.

Guidelines of the EDPB, 13 April 2021, 03/2021, *on the application of Article 65(1)(a) GDPR*.

Guidelines of the EDPB, 20 October 2020, 4/2019, *Data Protection by Design and by Default*.

Guidelines of the EDPB, 21 April 2020, 03/2020, *on the processing of health data for research purposes in the context of the COVID-19 outbreak.*

Guidelines of the EDPB, 21 April 2020, 04/2020, *on the use of location data and contact tracing tools in the context of the COVID-19 outbreak*.

Information document from the Secretary General, Council of Europe, SG/Inf(2020)11, 7 April 2020, *Respecting democracy, rule of law and human rights in the framework of the COVID-19 sanitary crisis - A toolkit for member states*.

Information Document of the Secretary General, 7 July 2020, SG/Inf(2020)19, *The impact of the sanitary crisis on freedom of expression and media freedom*.

Interim guidance of the World Health Organization, 16 December 2020, WHO/2019-nCoV/SurveillanceGuidance/2020.8, *Public health surveillance for COVID-19.*

Interim guidance of the World Health Organization, 4 November 2020, WHO/2019-

nCoV/Adjusting_PH_measures/2020.2, *Considerations for implementing and adjusting public health and social measures in the context of COVID-19.*

International Covenant on Civil and Political Rights (ICCPR), New York, 16 December 1966.

International Covenant on Economic, Social, and Cultural Rights (ICESCR), New York, 16 December 1966

International Health Regulations of the World Health Organization, 25 May 2005, WHA58.3.

Joint Communication of the European Commission, 23 March 2020, JOIN/2020/5 final, *EU Action Plan on Human Rights and Democracy 2020-2024*.

Judgement of the European Court of Human Rights, 1 July 1961, 332/57, *Lawless v. Ireland*.

Judgement of the European Court of Human Rights, 10 July 2001, 41571/98, *Marshall v. the United Kingdom*.

Judgement of the European Court of Human Rights, 18 January 1978, 5310/71, *Ireland v. the United Kingdom*.

Judgement of the European Court of Human Rights, 19 February 2009, 3455/05, *A. and others v. the United Kingdom.*

Judgement of the European Court of Human Rights, 26 May 1993, 14553/89, *Brannigan and McBride v. the United Kingdom.*

Judgment of the European Court of Human Rights 27; 17 September 2009, No. 10249/0317, Scoppola v. Italy (2); 15 October 2009, No. 17056/06, *Micallef v. Malta*.

Judgment of the European Court of Human Rights, 10 February 2009, application No. 14939/03, *Sergey Zolotukhin v. Russia*.

Judgment of the European Court of Human Rights, 11 July 2002, No. 28957/95, *Christine Goodwin v. the United Kingdom.*

Judgment of the European Court of Human Rights, 13 May 1980, No. 6694/74, *Artico v. Italy*.

Judgment of the European Court of Human Rights, 18 February 2009, No. 55707/00, *Andrejeva v. Latvia.*

Judgment of the European Court of Human Rights, 25 April 1978, No. 5856/72, *Tyrer v. the United Kingdom.*

Judgment of the European Court of Human Rights, 25 January 2005, Application no. 56529/00, *Enhorn v. Sweden*.

Judgment of the European Court of Human Rights, 27 November 2008, No. 36391/02, *Salduz v. Turkey*.

Judgment of the European Court of Human Rights, 29 June 2007, No. 15472/02, *Folgerø and Others v. Norway*.

Judgment of the European Court of Human Rights, 8 July 2004, 43924/00, *Vo v. France*.

Judgment of the International Court of Justice, 5 February 1970, General List No. 50, *Barcelona Traction, Light and Power Company, Limited (Belgium v. Spain).*

Opinion of the General Data Protection Supervisor, 23 September 2016, 8/2016, *on coherent enforcement of fundamental rights in the age of big data*.

Ordinanze del Ministero della Salute, 12 Marzo 2021, *Ulteriori misure urgenti in materia di contenimento e gestione dell'emergenza epidemiologica da COVID-19 nelle Regioni Puglia, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Lombardia, Piemonte, Veneto, Molise*.

Press release of the Council of Europe, 10 February 2021, 81/21, *Confidentiality of electronic communications: Council agrees its position on ePrivacy rules*.

Press release of the Council of the European Union, 30 March 2021, 246/21, *COVID-19 shows why united action is needed for more robust international health architecture - Op-ed article by President Charles Michel, WHO Director General Dr Tedros Adhanom Ghebreyesus and more than 20 world leaders.*

Press release of the European Council, 20 May 2021, 375/21, *EU supports start of WHO process for establishment of Pandemic Treaty: Council decision*.

Proposal of the European Parliament and of the Council, 10 February 2021, 6087/21, *for a Regulation concerning the*

respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC.

Recommendations of the EDPB, 10 November 2020, 02/2020, *on the European Essential Guarantees for surveillance measures.*

Regulation (EU) of the European Parliament and of the Council, 14 November 2018, 2018/1807, *on a framework for the free flow of non-personal data in the European Union*.

Regulation (EU) of the European Parliament and of the Council, 27 April 2016, 2016/679, *on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)*.

Regulation of the European Union, 12 February 2021, 2021/242, 32021R0241, *establishing the Recovery and Resilience Facility*.

Regulation of the World Health Organization, 1 January 2016, A58/41, *International Health Regulations (2005) Third Edition*.

Report of the Committee on Legal Affairs and Human Rights, 16 September 2020, No. 15139, *The impact of the Covid-19 pandemic on human rights and the rule of law*.

Report of the High-level Panel on Threats, Challenges and Change, 2 December 2004, A/59/565, *A more secure world: our shared responsibility*.

Report of the Human Rights Council, 1 March 2018, A/HRC/37/52, *on the promotion and protection of human rights and fundamental freedoms while countering terrorism on the human rights challenge of states of emergency in the context of countering terrorism*.

Report of the Special Rapporteur, 14 March 2006, E/CN.4/2006/41, *on adequate housing as a component of the right to an adequate standard of living, and on the right to non-discrimination in this context*.

Report of the Special Rapporteur, 21 March 2006, E/CN.4/2006/48/Corr.1, *on the right of everyone to the*

enjoyment of the highest attainable standard of physical and mental health.

Report of the Sub-Commission of the European Commission of Human Rights of the Council of Europe, 31 May 1968, D2520306.2/31, *The Greek Case, Application(s) No.3321/67 - DENMARK v. GREECE, No.3322/67 - NORWAY v. GREECE, No. 3323/67 - SWEDEN v . GREECE, No.3344/67 - NETHERLANDS v. GREECE*.

Report of the UN Human Rights Council, 5 July 2010, A/HRC/15/32, *on Human Rights and International Solidarity*.

Resolution of the Committee of Ministers, 31 March 2010, CM/ResChS(2010)1, *on Collective complaint No. 46/2007: the European Roma Rights Centre (ERRC) v. Bulgaria*.

Resolution of the Economic and Social Council, 28 September 1984, E/CN.4/1985/4, *The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights*.

Resolution of the UN General Assembly, 10 December 1948, A/RES/217(III), *Universal Declaration of Human Rights*.

Resolution of the UN General Assembly, 16 December 1966, A/RES/21/2200, *International Covenant on Economic, Social and Cultural Rights, International Covenant on Civil and Political Rights and Optional Protocol to the International Covenant on Civil and Political Rights*.

Resolution of the UN General Assembly, 21 October 2015, A/RES/70/1, *Transforming our World: The 2030 Agenda for Sustainable Development*.

Resolution of the UN General Assembly, 21 October 2015, A/RES/70/1, Transforming our world : the 2030 Agenda for Sustainable Development.

Resolution of the UN General Assembly, 24 October 1970, A/RES/2625(XXV), *The Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States.*

Statement of the EDPB, 2 June 2020, *on restrictions on data subject rights in connection to the state of emergency in Member States*.

Statement of the EDPB, 9 March 2021, 03/2021, *on the ePrivacy Regulation*.

Technical Report of the European Centre for Disease Prevention, 18 November 2020, *Contact tracing: public health management of persons, including healthcare workers, who have had contact with COVID-19 cases in the European Union – third update*.

Transcript of the World Health Organization, 11 March 2020, *Virtual press conference on COVID-19*.

Vienna Convention on the Law of Treaties, Vienna, 23 May 1969.

Summary

Since the World Health Organization declared the COVID-19 outbreak a global pandemic on 11 March 2020, the world has registered the most severe public health crisis in decades. Not only every country has been affected, but also every segment of society, from childhood to elderly, from public hospitals to private businesses. For their scope and extent, the consequences of these happenings are expected to influence future generations as well. Nevertheless, they may offer a host of opportunities to understand the differences that unite us in a global community. Affirming that "emergencies call for extraordinary measures", States have imposed several restrictions on the enjoyment of personal freedoms to curb the spread of COVID-19. This work explores the effects of such 'state of necessity' on human rights. With a special regard to the European Union ('EU'), one seeks to analyse whether actions to limit contagions have complied with the treaties and conventions that constitute the core of international human rights law. Response, restrictions, and legitimacy are assessed throughout five chapters representing the different sides of the same pentagon.

Everything has begun when a new form of pneumonia was found in Wuhan, China, and firstly registered by the World Health Country Office on 31 December 2019. Soon classified as a novel coronavirus causing severe acute respiratory syndrome, the viral strain called 'SARS-CoV-2' has rapidly circulated worldwide. With no vaccine and inadequate healthcare resources, most countries resorted to various non-pharmaceutical interventions, as imposition of quarantine or isolation. Generally, March and April 2020 saw a remarkable expansion of public policies requiring the closure of schools and non-essential businesses, as well as the cancellation of conferences and sport seasons. In the EU, the European Centre for Disease Prevention and Control has established some practical coordination groups divided per thematic areas to promote a multidisciplinary response to the crisis. Between 'individual capacities' and 'combined approaches', hospitality chains have provided optimal care via systematic management, including specialists in infectious diseases, intensive care units, and infection prevention and control. Activities at the regional and national level (e.g., media information) have influenced the functioning of the middle zone sectors (e.g., crisis response team), which have directly determined the supervision of affected patients (e.g., infection prevention and control). Due to the contagiousness and globality of COVID-19, heads of state and government have put great emphasis on the need to adopt strong measures to contain the proliferation of cases. However, some of them did not define COVID-19 a threat until their country became evidently afflicted by it, as it was for the US President Donald Trump.

While having its peculiar scenario, every country has addressed the issue taking inspirations from previous impasses (i.e., states of emergencies) and making directly reference to the procedures which had already succeeded in

restoring normalcy in war periods (i.e., strong constraints on individual freedoms to prevent safety). But the scope and extent of the pandemic have required States to seek solutions to many overlapping issues. Balancing between individual rights and collective interests has unveiled the difficulty of international law to equally address transboundary health-related problems and the cross-border effects of domestic policies, both threatening further breaches of human rights.

As reiterated by the International Court of Justice on numerous occasions, independently from being categorised as 'civil and political', 'economic and social', or 'collective', human rights never stand aside, even in times of armed conflicts. However, their application may be clearly affected by public crises. During the COVID-19 pandemic, the disease itself has threatened the enjoyment of most human rights. Seeking to safeguard the right to life and the right to health has eventually increased the conflict between these and other rights (e.g., freedoms of assembly and association, freedom to express one's belief and religion, right to education, right to work, and right to private life). Indeed, human rights may represent both a moral claim that parties may invoke and an expression of these claims in positive law, as constitutional guarantees to hold governments responsible. In the past, human rights law was strictly associated with national legislation and so were individual complaints against authorities and private persons. By contrast, contemporary law deems human rights to be inherent in all human beings, regardless of race, sex, nationality, ethnicity, language, religion, or any other status. This great achievement was made possible by the establishment of the United Nations in 1945, firstly conceived to avoid the recurrence of the persecutions perpetrated by the Axis Powers and to promote peace and security through the principle of non-intervention. Since then, human rights law has evolved remarkably. At present, it consists of the bodies of international regulations and processes conceived to advance the principle of inter-State cooperation and respect of fundamental freedoms in all countries. From the post-Second World War law-making process, the 1950 European Convention on Human Rights ('ECHR') was the first comprehensive treaty to emerge, providing a thorough catalogue of human rights definitions. Although several international instruments may be mentioned, the 1966 International Covenant on Civil and Political Rights ('ICCPR') and the International Covenant on Economic, Social and Cultural Rights ('ICESCR') represent the core of the International Bill of Human Rights, together with the 1948 Universal Declaration of Human Rights ('UDHR'). While the ICCPR relates to issues such as the right to life, freedom of speech, religion, and voting (i.e., rights of first generation), the ICESCR concentrates on food, education, health, and shelter (i.e., rights of second generation). Both covenants proclaim human rights for all people and forbid discrimination. However, they envisage that certain rights may be affected during state of emergency (e.g., the right to liberty under Article 9 ICCPR, the right to education under Article 13 ICESCR, etc.). In particular, limitations

are allowed if they aim to protect national security, public order, public health or morals, or the rights and freedoms of others. During the COVID-19 pandemic, measures such as general lockdown have clearly amounted to a deprivation of liberty. Still, both covenants suggest that quarantine to prevent the spread of an infectious disease (i.e., an individual constraint) is a legitimate option when public health (i.e., a general interest) is at stake.

In the legal practice, the interpretation emerging from many judgements is that the ECHR should be applied in a way which renders human rights provisions practical and effective. In particular, States are required to comply at least with three obligations, namely the obligation to respect (i.e., to refrain from interfering), the obligation to protect (i.e., to care for individuals and groups against abuses), and the obligation to fulfil (i.e., to take action to facilitate the enjoyment of human rights and to react when a violation occurs). While balancing between these duties may vary according to the specific case, State responsibilities relate to all civil, political, economic, social, and cultural rights. In the context of the COVID-19 pandemic, for instance, the recognition of a right of everyone to the enjoyment of the highest attainable standard of physical and mental health (Article 25 UDHR and Article 12 ICESCR), has established obligations for States to protect, respect, and fulfil the right to health. Yet, the pandemic has demonstrated that such obligations may also entail human rights constraints, albeit within specific boundaries. The two instruments provided by law are 'limitations' and 'derogations'. On the one hand, limitations are restrictions tolerated when prescribed by law, assigned to a legitimate aim, and essential in a democratic society, giving that no other reasonable option is available. On the other hand, derogations are a temporary interruption of certain human rights, permitted in periods of public emergency, subject to prompt notification (Article 4 ICCPR and Article 15 ECHR), and permitted only when deemed to be essential by the pressures of the situation. No matter which instrument governments select, the supervision of national and international courts is indispensable to ensure that the practice of emergency powers is not normalised for future responses and that human rights re-expand to their original extent once the emergency is over.

In the EU, apart from a variety of recommendations relative to human rights at global, regional, and national levels, the Council of Europe has explicitly referred to the traditional principles of legality, proportionality, necessity, and timeliness to guide States' intervention. Still, the natural uncertainty about the virus biology and evolution has led member States to follow the precautionary principle to avert further risks for public health, security, and environment. Moreover, one has found the principle of transparency in the clear disclosure of information made by States to communicate in proper time. Finally, the principle of solidarity has entailed a mutual commitment among all global health institutions to defend the general interests and to cooperate in scientific progress. Apart from States' due diligence, it is necessary to comprehend that these general principles have been, per definition, 'beginnings'.

As the worldwide trend of COVID-19 is reducing daily, recalibrating human rights may be required to understand the effects of the pandemic in human rights law. One of the rights directly affected has been, indeed, the right to health. The traditional academic dialogue on the existence of a right to health, between the natural law theory and the libertarian one, has led to the recognition of the right to health as both the right to health protection and the right to healthcare. Under international and European law, the right to health is envisioned not only by the ICESCR (Article 12), but also by the Council of Europe's European Social Charter (Article 11), the Biomedicine Convention (Article 3), and the European Union Charter of Fundamental Rights (Article 35) – all conceiving equal access to healthcare as a basic human right. Raising some criticisms for its 'shrouded vagueness', such a right was clarified by the 2000 General Comment No. 14 on Health, which indicates the content of the right to healthcare with reference to both general and specific obligations (e.g., the concept of 'progressive realisation'). As regards the restrictions on the right to health, it is alleged that whenever the conditions of a serious lack of resources are met, public cuts on healthcare services (e.g., limiting free access to tests) can be justified if pondered with general human rights obligations, yet ensuring non-discrimination and a minimum level of healthcare guaranteed in any case. In this context, it is the domestic law of a State which is crucial in executing the right to healthcare. In Europe, some constitutions concentrate on specific categories (e.g., public health), while others accept the right to healthcare indirectly (i.e., as part of a social security right). In the past year, what has been evident is that, under international law, governments must at least carry a free or affordable essential healthcare (i.e., COVID-19 testing, tracing, and treatment), protect healthcare workers from infections through adequate protection, and advance effective therapies and/or vaccines. Still, the pandemic has suggested that governments must address the negative impacts of the disease on vulnerable groups and on the other policies regarding food, water, housing, and sanitation. To this end, the international community has witnessed two major challenges: the indirect effect of the fulfilment of the right to health on other rights (e.g., the right to life or privacy) and the contested implementation of a vaccine to reach herd immunity. At the end, the realisation of the right to health has resulted, more than in the limitative measures avoiding infections, in the development of several vaccine plans (e.g., 'Pfizer-BioNtech', 'Moderna' and 'Johnson & Jonhnson's'). Due to the short development time and the innovative technologies employed, these vaccines have been criticised for their unknown implications in the long run. So, the World Health Organization itself has provided a Vaccines-explained series evoking the need to end life loss and serious harms on individuals.

From the beginning of the pandemic, concerns about the appraisal of certain States' limitative measures, as well as their applicability as a response, have been accompanied by the technical problems of producing and delivering healthcare services. Failure of traditional health systems to counteract massive

disruption caused by COVID-19 has accentuated the demand to fine-tune new methods to control and manage the spread of diseases. Professionally called Artificial Intelligence ('AI') and Machine Learning ('ML'), such innovative tools have been largely implemented as supportive mechanisms monitoring, and somewhere reducing, the spread of COVID-19. As one may expect, computer-based evaluations in healthcare have raised doubts not only about the employment of digital technology as such, but also for the reorganisation of the medical field those innovations could provoke. In fact, ML necessitates a great amount of data to work and deliver proper results. In healthcare, this implies that clinical data, epidemiological data, and genetic data must be aggregated and processed jointly. For the COVID-19 response, technology-driven tools have supported public authorities in the collection of health data and in the forecast of the epidemic trend. ML algorithms have been run for the screening of the virus through a detection system that has proved to be highly sensitive and rapid compared to manual registration. However, considering that AI-tools do not deliver optimum results with small amount of data, cross-country AI-based modelling is crucial. But what data can be communicated without generating negative effects for individuals' rights? By issuing the Communication COM(2018)237 in April 2018, the European Commission has launched a regional project on AI that aims to ensure a suitable ethical and legal framework. Since then, it has promoted the establishment of a European AI Alliance and the dissemination of the 'Ethics guidelines for Trustworthy Artificial Intelligence', setting out the 7 key requirements that AI systems should meet to be reliable and trustworthy (i.e., human oversight, safety, privacy, transparency, diversity, well-being, and accountability). As soon as COVID-19 reached global awareness, the Commission issued a White Paper that has allowed AI health apps to advance rapidly. In particular, employing algorithms to analyse individual symptoms and provide effective 'medical guidance'.

Similarly, other countries have relied on artificial intelligence to counteract the pandemic. China, the first hotspot of the disease, was also the first to apply technology-based tools to monitor citizen's compliance with the restrictions, to assess the disease's evolution, and to develop new treatments. In the United States, the start-up Moderna has applied a biotechnology of messenger ribonucleic acid to reduce the time expected for a prototype vaccine testable on humans by applying bioinformatics, of which AI is an integral part. In South Korea, AI assisted healthcare personnel in designing testing kits, while in Singapore, it has been employed to do random home checks. Given its potentials, the use of AI in the clinical practice gives a great chance to renovate healthcare for the better. Still, it raises some ethical challenges. In this direction, the principle of 'informed consent' establishes a sort of responsibility for doctors who are required to alert the patient to the difficulties that may result from AI applications in the medical treatment. On the other hand, AI developers must ensure both reliability of datasets and transparency

to respect the right to health of individuals. Algorithmic (un)fairness and biases, often complex and non-transparent, suggest placing AI applications in a regulatory framework to be updated to the new technological developments. After all, when a disease converts into a threat to general security, the balance between the need to fight the disease and the duty to protect the rights of individuals is on an unsteady equilibrium. During the COVID-19 pandemic, in order to protect individuals from infection (as a threat to general security), States have pursued an approach of 'extreme monitoring', evidently invasive for individuals' privacy. At first sight, the general patrolling on people's movement, requiring self-certifications. On the other hand, the government's collection and use of such private information. Under a legal perspective, privacy is a fundamental right, indispensable for the autonomy and the protection of human dignity, to be protected from unjustified interferences (Article 12 UDHR, Article 8 ECHR, and Article 17 ICCPR). However, public authorities are allowed to restrict such a right in case of public emergencies and health risks if such limitations are found to be necessary and proportionate to a recognised aim. In an era of digitalisation and growth in mobile phone and online social media, the World Health Organization has recognised that digital surveillance tools help governments to identify disease outbreaks and engage in case detection. But while delivering quick information, algorithmic smart tools may also lack accuracy due to sample bias or over-interpretation of findings. Or they can result in an excessive gathering, usage, and storage of personal data, thus breaching individual confidentiality. The EU has a strong data protection system yet obliges member States to exchange personal data as a 'common good'. In the context of the COVID-19 outbreak, the European Commission has issued a toolbox to standardise contact tracing, unveiling the tendency to combine public health policies with public security strategies.

To guide member States in the process of contact tracing, the European Centre for Disease Prevention has depicted the steps to be taken during the COVID-19 response. One has evinced that, albeit national governments are allowed to pursue their own approaches, any 'obtrusive' tool should clearly pass the criteria of proportionality, necessity, and legality under international human rights law. In this framework, the EU General Data Protection Regulation 2016/679 ('GDPR') has constituted a safe harbour for human rights. In fact, the GDPR has confirmed the value of privacy as a fundamental right of individuals, thus playing a key role in providing terms and conditions for developers and users of Big Data. Moreover, by listing several definition and due process of data collection, storage, and use, the GDPR has contributed to accomplish freedom, security, and justice in Europe. And it has been relevant for AI-driven healthcare and medicine. For example, data subjects are entitled to access to the personal data in process, to be informed about the existence of automated decision-making, and about the foreseeable consequences of such processing. Complementary to the GDPR, the EU Regulation 2018/1807 aims to ensure the free flow of general data within the Union, by establishing rules

for localisation and availability. As a strong supplement plumbing the depths of these two regulations, the European Data Protection Board has published several guidelines elucidating how States should act when personal data are in jeopardy. On the basis of the EU 2002 ePrivacy Directive, one has emphasised the need to encompass all electronic communications (including cookies and user preferences). To this purpose, the forthcoming EU ePrivacy Regulation would be a *lex specialis* to the GDPR *lex generalis*, incorporating the personal data requirements into the digital networks (i.e., smart apps).

The COVID-19 crisis has demonstrated that any measure, digital or otherwise, is efficient if accompanied by a great deal of effort of both health authorities and the social community. On the one hand, the discovery and administration of vaccines against SARS-CoV-2 has instilled hope in the year 2021 and onwards. On the other hand, though, there is still much to achieve, especially in the non-medical field, where the legal and humanistic response to the pandemic is still on the agenda. It is now, in fact, that countries are facing the critical part of the pandemic: balancing between maintaining the current situation (of curbed transmissions) and going forwards in the promotion of an effective recovery. Now more than ever, States aiming at avoiding further infections and finally overcoming the impasse caused by COVID-19, are required to take a joint action to promote solidarity, consciousness, and a sustainable upswing. The first issue entails the correct understanding of new technologies and their implications for health and society at large: after the pandemic, what will change and what will remain the same? A second issue involves the normative implications of new digital tools that collect, process, and store a great amount of individual data. The pandemic has highlighted that, apart from national strategies, blended approaches connecting different instruments are more appropriate when dealing with both the challenges and possibilities of Big Data associated with technologies, in healthcare as in other fields. Security and health are two faces of the same coin, and the development of digital technology should work as a strong support in healthcare, in the general policy making and, of course, in the promotion of individual self-awareness.

Looking at the response to COVID-19, it is feasible to claim that the default mode has been a sort of 'subsumption', that is, the application of old rules to new phenomena. In fact, several States have publicly resorted to Article 15 ECHR to derogate from their obligations to secure certain rights and freedoms. However, the peculiarity of COVID-19 as a 'public threat', of biological nature and global extent, have made this situation different from the previous practice (i.e., observed in war times). Therefore, it would be more convenient to proportionally balance between a 'modern concept of rights' (dynamic and adaptable) and a 'traditional perception of duties' (historic and solid). In this way, one would prevent executive powers from triggering further breaches of human rights.

In the aftermath of the pandemic, developing and employing smart solutions that are not precisely bound to a specific legal framework could generate a 'ratchet effect' and harmful consequences for human rights (e.g., unfairness of treatments and raising inequalities). Moreover, the exceptionality of the COVID-19 pandemic has called for a new interpretation of 'security', in terms of health prevention and sustainable growth. From this perspective, following the example of Rambøll's 'Check-act-learn' apps, one may use 'gamification' to encourage awareness and 'good behaviour' in everyday life. This research has illustrated that the current balancing between individual rights and general interests largely depends on individuals and States' adherence to soft law instruments. To prepare and foster universal and collective solidarity, in line with the principles of fairness, inclusiveness, and transparency, this work recommends agreeing upon an international binding pandemic treaty centred on human rights. An all-encompassing approach, involving public authorities and private individuals, would aim to reinforce domestic and global resilience. In this context, the 2005 International Health Regulations and international human rights law should support the draft of such a treaty to guarantee a firm and recognised basis on which States can build and improve.

In the past few months, this theoretical proposal has almost become a reality. On 30 March 2021, global leaders united in an open call for the creation of a treaty which would enhance international capacity to predict and quickly react to pandemic threats. The international community has emphasised that a new treaty should significantly envisage the enhancement of transnational assistance to improve and control all those mechanisms that, being applied during the pandemic, have evidently affected human rights (i.e., alert systems, data-sharing, research, and delivery of medical and public health equipment). In this framework, a 'One Health' approach connecting the health of humans, animals, and our planet, is clearly necessary. As highlighted by the European Council, a foreseeable pandemic treaty should strengthen accountability and shared responsibility, transparency, and cooperation within the international system and its norms. An international pandemic treaty agreed under the World Health Organization would educate individuals and countries to act consciously and prevent communicable health diseases from spreading so rapidly. To this purpose, an international treaty on pandemics should mainly focus on: (1) early detection and prevention of health-related issues; (2) resilience to future health threats; (3) response to future global health related problems; (4) a greater international health structure led by the World Health Organization; and (5) the 'One Health' approach, uniting the health of humans, animals, and the planet. As for monitoring risks and data sharing, the treaty should regulate laboratory surveillance and foster partnership among research institutes. Introducing more steps of alert and improving algorithms' precision would enhance transparency and trust in AI-driven mechanisms in healthcare, as well as in other fields. A binding pandemic treaty should thus encompass all the existing regulations in matters of data protection (i.e., the

GDPR, the ePrivacy Directive and the EDPB Guidelines) to establish rules of procedures which could be updated as new technologies develop. Simulating reality, ‘gamification’ may educate people on the potential and dangers of the interplay between eHealth and surveillance.

The acknowledgement of personal freedoms as enshrined in human rights law today has been, indeed, the result of a long practice of positive thinking and courageous action. Still, huge steps forward must be taken. Human rights is a field in which ‘to stand still’ means ‘to retreat’. Therefore, one should hold onto the heritage and pass it on to generations to come. To respect, to protect, and to fulfil human rights.