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SARS-CoV-2/COVID-19:
Making Some Distinctions and Demolishing Some Myths

AJMC	*American Journal of Managed Care*
CCTV	China Central Television
CDC	Centres for Disease Control
CDCP	Centres for Disease Control and Prevention
CGTV	China Global Television Network owned by CCTV under control of the Publicity Department of the Chinese Communist Party
COBRA	Cabinet Office Briefing Room A (UK)
COVAX	COVID-19 Vaccines General Access (WHO and GAVI)
D-G	Director-General
GAVI	Global Alliance for Vaccines and Immunization
G7	Group of Seven, an inter-governmental political forum consisting of Canada, France, Germany, Italy, Japan, UK, USA, the world's most advanced economies and wealthiest liberal democracies
ITV	Independent Television (UK's commercial television service)
JAMA	*Journal of the American Medical Association*
NCBI	National Center for Biotechnology Information (USA)
NEJM	*New England Journal of Medicine* (USA)
ONS	Office for National Statistics (UK)
PHEIC	Public Health Emergency of International Concern (WHO)
PM	Prime Minister (UK)
Sage	Scientific Advisory Group for Emergencies (UK)
SCMP	*South China Morning Post*
WHO	World Health Organization (an agency of UN)

Introduction

This exploration hopes to shed some light on the various twists and turns in the trajectory of this viral outbreak, first in China and then worldwide, which has been going on for nearly two years. These twists and turns occur at several levels, of which three would be identified and focussed upon for the purpose of this exercise:

1. The scientific which in turn can be subdivided into (a): the biological sub-level, with SARS-CoV-2 as a virus, an organism with its particular characteristics of flourishing and thriving, (b): the medical level, with COVID-19 as a disease with its signs and symptoms and (c) the people level, so to speak, as it is actual human beings, lest we forget, who are exposed to the pathogen, of whom some actually fall prey upon exposure because they are vulnerable while some others are simply fearful about falling prey to it. Psychology, sociology, anthropology, politics are domains which are relevant to our understanding of Covid-19 and its manifestations – knowledge input from them is indispensable.

   One must also realise that science is practised by scientists who form a community which over time has developed its own procedures, constructing its own epistemological authority to validate, authenticate and authorise what may be called "The Science" in its name. Governments today all claim to follow The Science in those areas of decision- and policy-making which clearly rely on scientific input of some kind.
2. The political/social/cultural levels of a particular country as SARS-CoV-2/COVID-19 emerge and spread within it.
3. Given the complex network of modern global communication today, the emergence of an infectious disease in one country, unsurprisingly, leads to its "migration" very quickly to other countries. This then makes it necessary for us to understand the global reach of such a disease from the perspective of geopolitics today.

One cannot emphasise enough at the outset of this exploration, the need to grasp that these levels identified above are all intimately entwined to form a Whole which is more than or different from the sum of its component parts. Methodologically, it necessarily implies non-Reductionism.

However, given the twists and turns of the trajectory of SARS-CoV-2/COVID-19, I propose to approach it via a select chronology of their journey. Such a chronology appears to have two merits: (a) to act as landmarks which help focus the mind and more importantly (b) it may draw attention to patterns arising from the events which on the one hand, may suggest hypotheses that can explain puzzling phenomena/turn of events and on the other, provide data against which to test such hypotheses.

Possible related themes for Hypothesis-forming and Hypothesis-testing suggested by the Select Chronology

A: Matter of terminology: Does it matter?
(a) Why it matters to make the distinction between epidemic and pandemic. What unfortunate political consequences may follow should one fail to make the distinction?
(b) Does it matter that WHO uses official, technical language sanctioned by the organisation in its communication with member states?
B: Does it make sense to compare strategies employed in different countries and to consider whether some strategies could be said to be more effective than others from the Epidemiological vantage point?
C: If different countries/societies employ different strategies, can one provide any explanation to account for this difference in strategy choice?
D: The politicisation of SARS-CoV-2/COVID-19 in the geopolitical context.

Select Chronology of SARS-CoV-2 and COVID-19 in some countries as can be readily tracked

Three countries have been selected: China, USA and the UK for the following reasons:
1. The choice of China is obvious as it is reputed to be the first country in the world to have confirmed cases of the viral outbreak.
2. The USA is another obvious choice as the data reveal (see Table 1 below) that it tops the world-list of the victims of the viral outbreak according to several metrics, but for my purpose here in particular, I focus on Deaths per million of population. The UK follows closely behind.
3. The USA and the UK have other characteristics in common. They are highly developed, mature economies, belonging to G7; they are historically linked and they are anglophone countries. They see themselves as upholding **the key values of Western civilisation, namely, Democracy and Freedom**. Furthermore, the USA considers itself the world's leader in any domain one cares to name; the UK considers that it has "a special relationship" with America and sees itself as the closest and most valuable ally of the USA. (This does not, however, mean that the USA is committed to this perspective.)
4. They, therefore, form a useful contrast to China which is not a member of G7, considers itself at best as a "moderately prosperous" society and economy. It is also the world's most populous country (as of today), with a population more than four times that of the USA. China calls its own political system "socialism with Chinese characteristics", **whose key value is promoting/advancing the well-being of its people**.[1] It is seen by the Western countries to be distinctly "authoritarian", if not "totalitarian" in character. Furthermore, the US sees China, in the geopolitical context, as a threatening rival and competitor, although China claims it does not aspire to such ambitions.

Apart from these three countries, an international organisation has also been selected, namely, the WHO. The choice of WHO is obvious and needs no further comment. How it has handled and continues to handle the outbreak is crucial, at least in theory, to the trajectory of the disease world-wide; but what it could in reality achieve is one of the issues which will be considered in this Exploration.

The Select Chronology will be presented as follows: China, WHO, USA and UK. (To help readers, the chronology for China will be in bright red font, for WHO in light red, for USA in blue and for UK in light blue.) However, this presentation will be preceded by a general (but also select) chronology of events worldwide outside of these four countries/organisations (presented in black font) immediately below.

September 2019: The coronavirus first made an appearance in Italy well before the illness we now call COVID-19 emerged two months if not more later in Wuhan, China. The National Cancer

[1] The long history of political culture in China emphasised the concept of the "Mandate of Heaven" to rule "All under Heaven". Legitimacy to rule over the ruled on the part of the dynastic ruler depended on securing and bettering the livelihoods of those he ruled. The CPC, the party which rules China today has not challenged this tradition but incorporated it – see Zhang 2012, Chapter 3.)

Institute of Milan found in blood samples donated by patients to a cancer study, antibodies to fight the coronavirus – the presence of antibodies in a patient's bloodstream, according to medical scientists means that s/he has been exposed to and has recovered from the infection. Between September 2019 and March 2020, 11 patients out of 956 (that is, six percent) had developed antibodies to the coronavirus well before February 2020. This finding was published by the INT's scientific magazine *Tumori Journal*; the study is entitled "Unexpected detection of SARS-CoV-2 antibodies in the pre-pandemic period in Italy". It also found another specific case of such antibodies in a test carried out by the University of Siena. (See EXPRESS 16 November 2020.)

18 December 2019: Italy's National Institute of Health (ISS) reported that sewage water from two cities, Milan and Turin, contained genetic traces of the coronavirus. (See BBC News 19 June 2020.)

27 December 2019: French scientists in May 2020 reported that tests on samples taken in late December 2019 showed that a patient who presented with suspected pneumonia near Paris actually confirmed that the patient had coronavirus. (See BBC News 19 June 2020.)

c mid-January 2020: Spain in a study found traces of the coronavirus in waste water collected in mid-January in Barcelona, some 40 days before the first local case was discovered. (See BBC News 19 June 2020.)

11 January 2020: **Virological.org published the findings of the Chinese team led by Zhang Yongzhen about the genome of the virus.**

24 January 2020: *The Lancet* Online published a report by **Chinese scientists (Hong Kong and Shenzhen) about person-to-person transmission of the virus**.

The Lancet also published a report by **Chinese scientists giving detailed clinical picture and account of the first 41 cases in China, stressing the pandemic nature of the virus**; scientists in Hongkong compared this viral outbreak with 2002-2003 SARS epidemic.

27 January 2020: The first case of infection reported in Kerala, India of a person who had visited Wuhan earlier. (See *IJMR* May 2020.)

29 January 2020: The genome sequence of the new coronavirus, undertaken by the CDC, China was published in *The Lance*t.

The *New England Journal of Medicine* (*NEJM*) Online published an article in which Chinese scientists, upon analysis of data on the first 425 cases in Wuhan, concluded that there was evidence of **human-to-human transmission**.

3-19 February 2020: **The cruise ship, Diamond Princess whose passengers and crew were diagnosed as follows**: 19.2% infected (712 people, out of a total of more than 3,500 on board, of which 567 were passengers and 145 crew members), 57.6% showed no symptoms when tested positive, and 46.5% remaining asymptomatic when tested positive later. (See *Nature* 26 March 2020; *Statista* 4 September 2020.)

19 February 2020: Statement in support of the scientists, public health professionals, and medical professionals of China combatting COVID-19. (See *The Lancet* 19 February 2020.)

Italy declared Codogno, a town in the Lombardy region, a "red zone" after a coronavirus patient was identified, to be followed next by nine other towns in Lombardy and neighbouring Veneto and eventually with the whole country going into Lockdown on 8 March 2020. (See BBC News 19 June 2020.)

8, 14, 17, 22 March 2020:

On these dates, the respective governments of **Italy, Spain, France and Germany declared Lockdown**; each country also was hoping to lift its lockdown on these respective dates – 12 April, 11 April, 15 April and 19 April 2020. (See *Edinburgh News* 7 April 2020.)

As events turned out, Italy lifted Lockdown on 21 June 2020 (total of **94** lockdown days), France on 20 June 2020 (total of **91**days), Spain by 25 June 2020 (total of **99** days) and Germany with facilities already open as well as from 30 June, working from home would no longer be compulsory (maximally a total of **101** days). (See BBC News 25 June 2020.)

17 March 2020: Article in *Nature* reported: (a) epidemiologists claimed that, in spite of overall success, the Chinese response had one glaring flaw, namely that it started too late. Wuhan authorities were slow to report cases, delaying measures to contain it. One American University of Michigan public-health researcher said: "The delay of China to act is probably responsible for this world event"; (b) reported two researchers at the University of Southampton, UK via a model simulation similarly claimed that implementation of

China's control measures a week earlier could have prevented 67% of all cases, three weeks earlier could have reduced the number of infections to 5% of the total; (c) that the drop of contact between people and the country's intercity travel bans prevented cases from increasing by 67-fold – "otherwise, there would have been nearly 8 million cases by the end of February"; (d) they prioritised early detection and isolation as the most important factors in reducing cases of infection, as in their absence, China would have had five times as many infections as occurred at the end of February 2020.

1 April 2020: A Singapore study detailing instances of **presymptomatic transmission.** (See Morbidity and Mortality Weekly Report.)

4 May 2021: China's COVID vaccines went global – but questions remained.
China could not test the vaccines it had developed because by the time they were ready for trial, the country's non-pharmaceutical measures had already controlled the spread of the virus. (See *Nature* 4 May 2021.)

12 June 2020: Summary and update of the role played by **asymptomatic transmission** which showed that in asymptomatic persons, the virus exists "in lower concentrations and for a shorter period than in symptomatic persons, suggesting a shorter period of infectiousness." (See Office of the Chief Medical Officer, CDC COVID-19 Response)

c Mid-June 2020: Nearly 35,000 people had died with Covid-19 in Italy, according to the Johns Hopkins University Tracker. (See BBC News 19 June 2020.)

Nov. – Dec. 2020: Moderna (USA), Pfizer-BioNTech (Europe) announced that their mRNA vaccines had successfully passed their respective Phase III trials. (See Pfizer 18 November 2020; Biospace 3 December 2020.) The Oxford-Astrazenica vaccine using traditional vaccine technology was approved for use in the UK vaccination programme on 30 December 2020 – see GOV.UK 30 December 2020.)
Two Chinese vaccines were announced: Sinopharm and CoronaVac. The former has full authorisation in four countries including China (since December 2020) but also authorised for emergency use in 93 other countries, while the latter has full authorisation in only China (since December 2020) but has authorisation for emergency use in 60 other countries. (See *Nature* 4 May 2021.)

17 September 2021: WHO Global reported 226,844,344 confirmed cases and 4,666,334 deaths.
In China, from **3 January 2020 to 10 September 2021**, there had been in total 123,386 confirmed cases with 5,686 cumulative deaths, 1 death within the last 24 hours, reported to WHO.
The Guardian reported that four days ago, the first of 15 civil lawsuits in Austria and Germany had been launched by the family of a skier who died having caught the virus at the Austrian ski resort of Ischgl in March 2020; the lawyer representing the widow cited evidence about a series of serious faults the resort and the surrounding area committed when it became known that Ischgl was a virus hotspot and the guests had to be evacuated. (See *The Guardian* 17 September 2021.)

20 September 2021: See Table 1 below for figures for some selected countries as on 20 September 2021. The countries are arranged using the metric of Deaths per million population in a descending order of magnitude. This metric enables one to take into account the tremendous difference in population sizes between countries, ranging from Singapore on the one hand to China and India on the other.[2]

[2] Let's carry out a thought experiment. Assume for a moment that the number of deaths reported pertained only to Wuhan and its surrounds such as the smaller city of Huanggang; together, the two cities yield a population roughly of 18 million. In this hypothetical case, Deaths per million population would amount to roughly 256 which is still a very "respectable" figure in the light of Table 1. The Netherlands has a population (as of 2020) of just over 17 million; however, Deaths per million population stand at 1024 – see Statista 30/09/2021.
Spiegelhalter and Masters 2021, 137 point out that this metric of Deaths per million population may be said to be too gross as it does not distinguish between different age groups of those who died. For instance, 23% of the population in Italy are over 65 years old, whereas it is 18% in the UK and 14% in Ireland. If a virus hits older people, then Italy would have more deaths than Ireland or the UK. They argue for an age-standardized mortality rate.

	Confirmed cases (absolute)	Cases in last 7 days	Confirmed deaths (absolute) [3]	Deaths in last 7 days	Daily increase (# deaths)	Population in million (total)	Deaths per million (total)
Italy	4,636,111	26,906	130,310	355	26	60.3	2,161
USA	41,888, 035	766.936	670,441	11,529	291	328.24	2,042
UK	7,394,701	171.751	134,867	932	51	66.83	2,017
Spain	4,929,546	14,281	85,783	390	0	47.08	1,822
France	6,589,034	36,699	111,290	113	22	67.06	1,659
Germany	4,149,832	42,525	92,977	283	13	83.13	1,118
India	33,448,163	158,584	444,838	1,625	0	1,366.42	325.5
Thailand	1,476,477	81,721	15,363	878	117	69.63	220.02
Japan	1,678,092	31,964	17,224	360	41	126.26	136.41
South Korea	287,536	11,626	2,409	42	5	51,71	46.55
Singapore	77,804	5,510	60	2	0	5.7	10.52
People's R of China	107,961	412	4,849	0	0	1,397.72	3.48

Table 1: Some Data from Some Selected Countries (culled from Statista 20 September 2021)

21 September 2021: The Secretary-General of the UN pronounced that the world (as shown by the COVAX initiative inaugurated exactly a year ago on 21 September 2020) collectively had failed obscenely as far as ethics was concerned – while the majority of the prosperous economies had been vaccinated, more than 90% of people in the world's poorest countries, so far, had not even received one dose of any vaccine. (See Reuters 21 September 2021.)

China

8 December 2019: **In Wuhan, China, the first person said to have been infected was said to be an office worker with no known travel history.** (This date has been pushed back to 17 November 2019 according to the *South China Morning Post*, as reported in *Live Science* 14 March 2020; see also *The Guardian* 13 March 2020.)

27 December 2019: A doctor, **Zhang Jixian from the Hubei Hospital of Integrated Traditional Chinese and Western Medicine reported to the hospital three patients with pneumonia from unknown causes**. Wuhan's **CDCP dispatched epidemiological investigators to probe and test, the very same day**.

29 December 2019: The same hospital reported another four such cases, patients who were from the Huainan seafood market in the city.

30 December 2019: **Experts from the Wuhan health commission upon investigation issued two internal documents** in the afternoon and early evening (one at 3.10 pm and the other at 6.50 pm), requesting that the patients identified within the last three days be treated by them. At the same time, they also ordered an investigation into these cases including a case search and retrospective investigation. After the two documents were issued, they were put online by some people who had access to them. The ophthalmologist, Dr Li Wenliang was sent a message at about 5.30pm by a colleague about these cases and he immediately forwarded the message to his WeChat group, referring to them as "seven cases of SARS" and saying that the infected people were in isolation in the emergency department in the hospital. He followed this with another message at 6.42pm saying that the coronavirus infection had just been confirmed and that the virus was being classified; he followed it up by asking the group not to spread the information but just to be careful.

(See *The Global Times* 19 March 2020 for events 27-30 December 2020.)

[3] Spiegelhalter and Masters 2021, Chapter 11 consider some of the problems with regard to the metric. They draw attention to the distinction between "dying *with* Covid" and "dying *because* of Covid". Figures from NHS England should be read in the light of the distinction. Up to August 2020, in the earlier part of the pandemic, the figures pertained to the latter; it covered 93% of all deaths registered during the period. However, as the pandemic proceeded, the former became/becomes more to the point so much so that by late April 2021, this category has risen to 32% of all deaths registered. They also point out that in the case of death, "it is rare for there to be only one primary cause of death, and Covid-19 is no exception. In the first wave, in 91% of deaths involving Covid-19 there were pre-existing conditions, with dementia and Alzheimer's disease present in a quarter of them." Let me add a logical but hypothetical extension to this point just made - an extreme sceptic could argue that no-body ever dies of COVID-19, using the strict definition that to count as dying because of COVID, there must be only one cause, namely, only the presence of COVID-19 and no other factor. This, however, would be a "triumph" owing entirely to a linguistic fiat which has nothing to do with medical reality on the ground.

The Jinyintan Hospital in Wuhan confirmed a new type of coronavirus in a patient with strange pneumonia.

31 December 2019: **Wuhan issued health alert**. Four cases of this new pneumonia were linked to the Huainan seafood market.

The WHO China Country Office received notification of cases of pneumonia of unknown etiology detected in Wuhan City, Hubei Province of China.

1 January 2020: Huanan seafood market was closed.

3 January 2020: Wuhan reported 44 infected cases; **Chinese scientists began to work with WHO. Starting from this date, China regularly updated WHO, relevant countries and regions in the world as well as Hong Kong, Macao and Taiwan**. (See *Xinhua Net* 6 April 2020.)

Dr Li Wenliang was summoned by the Public Security Bureau in Wuhan and told to sign a statement which said that he was spreading rumours about the outbreak of the virus, amounting to a disturbance of public order. He signed; if not he would have faced legal punishment, he said. He spoke about it to both the Chinese and Western media – *Caixin* and *The New York Times*. (See *The Lancet* 18 February 2020; *The Global Times* 19 March 2020.)

5 January 2020: Chinese scientist, **Zhang Yongzhen, successfully sequenced the new virus's genome**. (Sent to Virological. org which published it on 11 January 2020; see TIME 24 August 2020.)

On the same day, **Professor Zhang called Wuhan Central Hospital and contacted China's Ministry of Health.** He also uploaded the genome to the **U.S. National Center for Biotechnology Information** (NCBI).

7 January 2020: Wuhan-China announced that it had identified the pathogen for the illness as a new coronavirus. (See *Nature* 8 January 2020.)

21 January 2020: The mayor of Wuhan, Zhou Xianwang, in an interview with CGTV/CCTV said "As long as it helps contain the spread of virus, I'm willing to resign as a form of apology" for having led the city to being locked down, a city of 11 million people, a measure which had never been taken in the history of humankind on such a scale in attempts to control infectious diseases. He admitted that the city's governance was "not good enough" as the virus spread. However, he pointed out that local/regional authorities had to adhere to the protocol regarding infectious diseases and seek authorisation before disclosure of information. (See CGTV 28/01/2020; SCMP 22 January 2020; *The Guardian* 27 January 2020).

His resignation was officially recorded as being accepted by the General Office of the Standing Committee of the Wuhan Municipal People's Congress, and adopted at the 35th meeting of the Standing Committee of the 14th Wuhan Municipal People's Congress on 22 January 2021 – see Teller Report 22 January 2021.

4 deaths and more than 200 confirmed cases were reported in Wuhan.

However, Chinese authorities did not publicly concede that there was human-to-human transmission until this date when according to the *South Morning Post*, the government already knew about such a possibility much earlier – see *The Guardian* 13 March 2020. (WHO was notified by China about this matter on 21 January 2020 – see Chronology WHO. *The NEJM* Online also published an article based on the first 425 cases in Wuhan about human-to-human transmission only on 29 January 2020, nearly a week after *The Lancet* on 21 January 2020.)

23 January 2020: **China introduced Lockdown on Wuhan and Huanggang, a smaller city, 30 miles to the east of Wuhan**. This meant that a total of 18 million people were under Lockdown. (See BBC News 23 January 2020; *AJMC* 1 January 2021.)

13 more deaths were reported, bringing the total to 17 and an additional 300 confirmed cases, **bringing the total to more than 500.** (See *AJMC* 1 January 2021.)

China announced the building of new dedicated hospitals (*Fangcang*, a novel concept of a shelter hospital) in Wuhan to cope with those infected with the new coronavirus, the first of which opened on 3 February 2020. (See *The Lancet*, 18/04/2020.)

24 January 2020: Chinese medical scientists and doctors provided the **first case description of what later is called COVID-19 only a few weeks after the emergence of the new phenomenon**. Chinese clinicians based on their work in Hong Kong and Shenzhen were **the first to conclude that the new virus involved human-to-human transmission.**)
(See *The Lancet* 24 January 2020; see also Horton 2021, Chapter 3, Notes 1 and 2.)

26 January 2020: Arrival from this date of medical resources/equipment, medical personnel (eventually totally more than 42,000 medical workers from all over the country), even food from all of China to Wuhan out of solidarity. (See *China Daily* 6 May 2020.)

29 January 2020: ***The Lancet* published the genome sequence of the new coronavirus undertaken by the CDC, China.**

30 January 2020: **China via its Ministry of Health reported to WHO** of the data available of 7,711 confirmed cases, 12,167 suspected cases with the breakdown of confirmed cases into categories such as 1,370 severe cases leading to 170 deaths and 124 cases who recovered and were discharged from hospital.

31 January 2020: Leading Hongkong epidemiologist and team warned of pandemic. (See *Quanta* 28 January 2021 about the work of Joseph Wu and his team of mathematical disease modellers.)

5 February 2020: Within a fortnight of the announcement of building Fangcang shelter hospitals, Wuhan opened the first three (with 13 more in the following weeks till 10 March 2020) to look after mild to moderate infected cases. (See *The Lancet* 2 April 2020.)

5-10 February 2020: 19 other provinces in China partnered with 16 other Hubei cities and towns (Wuhan is the capital of Hubei province) to render assistance. (See *Global Times* 10 April 2020.)

6 February 2020: The Zhongnan Hospital of Wuhan University Novel Corona Virus Management and Research Team published an update of the diagnostic criteria of the virus. (See PMID:32245396.)

7 February 2020: Dr Li Wenliang became infected with the virus and very unfortunately died of it, aged 33. His death produced a tsunami of sympathy, grief and anger across the nation. (His parents, too, were infected, but they recovered.)

An investigation team was immediately appointed by the central government to look into the events concerning Dr Li. This team **reported on 19 March 2020**. (See *The Global Times* 19 March 2020.)

21 February 2020: *JAMA* (Online) published paper by Chinese scientists about the asymptomatic transmission of the virus.

10 March 2020: **All Fangcang hospitals were suspended, being surplus to requirement**, with the first having closed since 1 March 2020. (See *The Lancet* 18 April 2020.)

19 March 2020: **Report by China's top supervisory body relating to those events concerning Dr Li Wenliang was released after a 42-day investigation**. (See events above under 27-30 December 2020 and 7 February 2020 listed above.) This body in its report had "asked the local supervisory body to supervise the rectification of the matter, hold relevant personnel accountable" and in due course to "announce the results". (See *The Global Times* 19 March 2020.)

2 April 2020: Dr Li Wenliang (posthumously) together with 13 other medical workers who lost their lives as front-line health workers against COVID-19 were awarded the title of martyr. (See *The Global Times* 20 April 2020.)

8 April 2020: **Wuhan's Lockdown officially ended after 76 days**. (See *The Guardian* 7 April 2020.)

China is said to have taken 11 measures to contain Covid-19: trains not stopping at Wuhan, the epicentre of the disease; people who suspected themselves to be infected could attend a fever clinic; coronavirus testing was easily accessible and free; building the Fangcang hospitals in record time; entire hospital wards were walled off to contain the virus; large-scale contact tracing was undertaken; used new technology to ensure that every single COVID-19 case would be traced; non-urgent medical care was postponed, many doctor's consultations went online; those who had to self-isolate at home could readily get food delivered, ordering online; medical supplies/equipment as well as medical personnel and ordinary people from other provinces rushed to Wuhan-Hubei volunteering to help; ordinary citizens did their bit to help in whatever way they could. At the same time, social media were subject to control. (See *Business Insider* 16 March 2020.)

15 April 2020: China issued revised case and death counts. (See BBC News 15 April 2020.)

20 April 2020: Dr Li Wenliang was posthumously awarded the May 4th Medals to commemorate all 34 recipients for their sacrifice in their fight against COVID-19. The nominees for the awards were selected by a panel of 108 judges from the CPC, government organs, universities, research institutes, media and some grass-roots youth representatives. In this commemoration, in respect of Dr Li, it pointed out that according to the report of the supervisory body released on 18 March 2020, **the Wuhan police station had acted inappropriately, that they should rescind their accusation of spreading rumours**

about the viral infection, that they apologise to his family and that the two police officers involved in making Li sign the statement should be punished for dereliction of duty. (See *The Global Times* 20 April 2020.)

27 September 2021. *The South China Morning Post* (SCMP) reported today that a series of emails in 2020 showed failure to respond on the part of the Wuhan Virology Lab (WVL) to requests from the Galveston National Laboratory (Texas) with whom WVL had been collaborating to share "reference [viral] isolates". This series of emails took place between 22 January 2020 and April 2020.

SCMP produced two different kinds of comments about the episode: (a) Lawrence Gostin, faculty director of the O'Neill Institute for National and Global Health Law at Georgetown University, US is cited as saying: "China has been a bad actor …"; (b) other experts are reported as saying that this kind of problem is a long standing one around the world in the absence of an international agreement to share such highly sensitive and dangerous pathogens. SCMP reported that although members of WIV would like to share, they could not act against Chinese regulations which in March 2019, well before the pandemic, had adopted more stringent oversight and security review for sharing such material with foreign bodies and institutions.

29 September 2020: SCMP on 28/09/2021 reported that according to *Xinhua*, the Chinese government had confirmed its agreement to permit the testing of blood samples stored in a Wuhan blood bank since 2019 of relevant donors, once the two-year statutory storage period had expired. This testing is expected to cast light on the origins of SARS-CoV-2/COVID-19; experts, however, warned that such an investigation would take a long time and, therefore, the world should not expect an outcome any time soon.

WHO has advertised for experts around the world to apply to join the group, Sago (Scientific Advisory Group for the Origins of Novel Pathogens) has been tasked with carrying out this investigation.

(See *SCMP* 29 September 2021.)

WHO

2 January 2020: **WHO (The Global Network and Response Network Partners) announced the Wuhan cases.**

4-5 January 2020: WHO initially via Twitter announced these new cases and then later undertook more formal notification of them.

9 January 2020: Announced mysterious new Coronavirus-related pneumonia in Wuhan-China, with 59 cases in Wuhan. (See *AJMC* 1 January 2021.)

10 January 2020: WHO issued technical guidance on how to prepare countries to detect, trace and manage such cases (See National Capacities Review Tool for a Novel Coronavirus).

12 January 2020: WHO said that it had received detailed information of the genetic sequencing from China's National Health Commission. (See *Xinhua* 13 January 2020; WHO 27 April 2020.)

13 January 2020: **WHO reported a person travelling from Wuhan, arriving in Thailand** and was hospitalised with infection since 8 January 2020. This is the first recorded case outside of China. (See WHO 14 January 2020.)

21 January 2020: WHO said that available data to date from Chinese scientists showed some **human-to-human transmission**. Four deaths and more than 200 infected cases were reported in Wuhan.

22-23 Jan. 2020: The D-G of WHO (Dr Tedros Adhanom Ghebreyesus) convened an Emergency Committee (EC) under the IHR 2005 to consider if the outbreak constituted a PHEIC. (This is the technical term equivalent in meaning to what is commonly called "pandemic" in English.) The EC did not arrive at a consensus and asked to be reconvened within the next 10 days when more information would be forthcoming.

28 January 2020: D-G led a senior team to Beijing to get more information and to offer help and assistance.

29 January 2020: D-G gave press briefing after visit to China: "The fact that to date we have only seen 68 cases outside China, and no deaths, is due in no small part to the extraordinary steps the government has taken to prevent the export of cases. For that, China deserves our gratitude and respect. They're doing that at the expense of their economy and other factors." (See WHO Press briefing on WHO Mission to China and novel coronavirus outbreak.)

30 January 2020: WHO also announced that outside China, 83 cases in 18 countries had reported confirmed cases with 7 countries having had no history of travel in China; that three countries outside China had reported human-to-human transmission.

D-G declared a **PHEIC** in the light of teleconferencing its Emergency Committee, just under the 10 days of agreeing to reconvene it on 22-23 January 2020.
(See WHO Novel Coronavirus (2019-nCovV, Situation Report -10.)

11 February 2020: **WHO named the new illness COVID-19 and the coronavirus causing it SARS-CoV-2**. (See WHO Situation Report on 11 February 2020.)

14 February 2020: D-G pleaded with the world to use the window of opportunity to intensify preparedness, adopt a whole-of government approach, be guided by solidarity, not stigma. He also expressed concern about detecting worrying signs that the world "is not standing in unison with those at the epicenter in China who are saving lives and alleviating suffering." (See WHO 14 February 2020.)

16-24 Feb. 2020: WHO-China Joint Mission to China: the non-Chinese international experts came from Germany, Japan, Korea, Nigeria, Russia, Singapore, USA and WHO.

24 February 2020: **Press conference of the WHO-China Joint Mission took place**. The team leaders of the Joint Mission at a press conference stressed that "**much of the global community is not ready in mindset and materially, to implement the measures that have been employed to contain COVID-19 in China**". Mission stressed that to reduce illness and death, one must adopt large-scale implementation of "high-quality, non-pharmaceutical public health measures", such as case detection and isolation, contact tracing and monitoring quarantining and community engagement", that **success depends on "fast decision making by top leaders, operational thoroughness by public health systems and societal engagement."** (See also *Nature* 25 August 2020.)

28 February 2020: **Joint WHO-China investigation report published**.

11 March 2020: D-G became equally alarmed on two fronts: the lack of response on the part of many countries as well as the rapid spread of the virus itself. In response to criticisms, he used the term "pandemic" instead of "PHEIC". (See *Acta Biomed*. 19 March 2020; BBC News 11 March 2020.)

20 March 2020: **WHO claimed that "Covid was NOT air borne" and that the virus spread by droplets. This view remained unchanged until more than a year later on 30 April 2021** – see Speigelhalter and Masters 2021, 25.

2 April 2020: WHO reported **data showing transmission from symptomatic, pre-symptomatic and asymptomatic infected people**. (See Coronavirus disease 2019 (COVID-19), Situation Report 73.)

21 Sept. 2020: D-G announced the formation of COVAX, in partnership with GAVI (the Vaccine Alliance), CEPI (the Centre for Epidemics Preparedness Innovations) and other organisations, a plan to ensure that countries would have "guaranteed access to the world's largest portfolio of vaccine candidates." (See World Economic Forum 22 September 2020.)

January 2021: Second report on progress: Prepared by the Independent Panel for Pandemic Preparedness and Response for the WHO Executive Board, January 2021. Co-chaired by Ellen Johnson Sirleaf and Helen Clark.

29 Sept. 2021: See entry for this date under Chronology China.

USA

15 January 2020: **The USA confirmed report of its first case, involving a young man who had visited Wuhan.** (See CDC Newsroom 21 January 2020.)

Donald Trump (US president) is reported to have said:

20 January 2020: (In a CNBC interview): "We have it totally under control. It's one person coming in from China. We have it under control. It's going to be just fine."

24 January 2020: Trump tweeted: "**China has been working very hard to contain the Coronavirus**. **The United States greatly appreciates their efforts and transparency**. It will all work out well. **In particular, on behalf of the American People, I want to thank President Xi!**" (CNNpolitics 15 April 2020.)

30 January 2020: (In a speech in Michigan): "We think we have it very well under control. We have very little problem in this country at this moment – five – and those people are all recuperating successfully. But **we're working very closely with China and other countries**, and we

think it's going to have a very good ending for us … that I can assure you." (See FactCheck 18 March 2020.)
(On 31 January 2020, his government, through the Secretary of Health and Human Services announced travel restrictions for non-US citizens who had travelled to China within the prior two weeks from entering the US.)
US CDC reported the first case of human-to-human transmission in the USA. (See CDC Newsroom 30 January 2020.)

7 February 2020: (To the reporter, Bob Woodward): "It goes through air, Bob (Woodward). That's always tougher than the touch. … You know, so, this is deadly stuff."

10 February 2020: (At the White House): "Typically, that will go away in April. We're in great shape though. We have 12 cases – 11 cases, and many of them are in good shape now."

24 February 2020: (in a tweet) "The Coronavirus is very much under control in the USA. … Stock Market starting to look very good to me!"

26 February 2020: (White House coronavirus task force briefing): "So we're at the low level. As they get better, we take them off the list, so that we're going to be pretty soon at only five people. And we could be at just one or two people over the next short period of time. So we've had very good luck."

27 February 2020: (White House meeting with African American leaders): "It's going to disappear. One day – it's like a miracle – it will disappear."

28 February 2020: (At a rally in North Charleston, South Carolina, comparing flu with Covid-19): "… you hear 35 and 40,000 people and we've lost nobody. You wonder, **the press is in hysteria mode**." "**Now the Democrats are politicising the coronavirus**, you know that, right? Coronavirus, they're politicizing it. We did one of the great jobs." (29 February 2020: CDCP announced first confirmed death in the US; later autopsy results showed that two deaths in California had occurred in early and mid-February.)

2 March 2020: (An election rally with size of crowd ranging from 7,000 to 15,000 people, when asked how safe having such rallies during a public health crisis was): "**I think it's very safe**".

4 March 2020: (Interview on Fox News) "Well, I think **the 3.4% is really a false number", referring to the percentage of diagnosed cases worldwide who had died, as announced by WHO**.

7 March 2020: (When asked by reporters if he was concerned about the virus's arrival in Washington, DC): "No, I'm not concerned at all. No, we've done a great job with it."

10 March 2020: (Meeting with Republican senators): "**And we're prepared, and we're doing a great job with it. And it will go away. Just stay calm. It will go away**."

(11 March 2020: WHO declared that a global outbreak had occurred. In the US, testing was limited with only 20,166 test results in the country and death stood at 31 people.)

13 March 2020: **Trump declared a national emergency**.

15 March 2020: (White House Task Force briefing): "This is very contagious- this is a very contagious virus. It's incredible. But it's something that we have tremendous control over."

17 March 2020: (White House Task Force briefing): "**I've always known this is a pandemic – this is a real – this is a pandemic. I've felt it was a pandemic long before it was called a pandemic**."

(In other words, Trump was forced to admit that the pandemic was in full force in his country despite earlier denial or downplaying its seriousness since 21 January 2020 when the first case in the USA was confirmed. See also Timeline of Trump's Coronavirus Responses 6 April 2021.)

19 March 2020: (Interview with Bob Woodward): "To be honest with you, I wanted to always play it down I still like playing it down, because I don't want to create a panic."

24 March 2020: (Interview on Fox News): "So I think Easter Sunday and you'll have packed churches all over our country. I think it would be a beautiful time. And it's just about the timeline that I think is right."

(26 March 2020: US had 100,000 confirmed cases more than any other country in the world, with the death toll reaching 1,000.)

29 March 2020: (White House task force press briefing, about the death toll): "… if we can hold that down, … to between 100-and 200,000 – we all, together, have done a very good job."

(3 April 2020: The CDC recommended wearing of facemasks to prevent spread of the virus when other social distancing measures were difficult to maintain.)

3 April 2020: (White House task force press briefing regarding mask wearing): "So it's voluntary; you don't have to do it. … I don't think I'm going to be doing it. … **I'm choosing not to do it**, but some people may want to do it, and that's okay."

14-15 April 2020: The US President, Donald Trump announced that **the USA would stop funding WHO** because "**The WHO pushed China's misinformation about the virus**" and that as a result "**so much death has been caused by their mistakes.**" (See US President Trump announces "halting funding of WHO; CNNpolitics 15 April 2020.)

23 April 2020: (Task force press briefing, suggesting the use of disinfectant as treatment): "…And then I see the disinfectant, where it knocks it out in a minute, one minute. And is there a way we can do something like that by injection inside or almost a cleaning, because you see it gets in the lungs and it does a tremendous number on the lungs. So it'd be interesting to check that…"

(28 April 2020: **confirmed coronavirus cases in the US hit 1 million with more than 57,000 confirmed deaths from the virus**.)

18 May 2020: (Roundtable with restaurant executives): "**I'm taking it – hydroxychloroquine**. … A couple of weeks ago, I started taking it. … Because I think it's good."

19 May 2020: (A White House cabinet meeting): "So when we have a lot of cases, I don't look at that aa a bad thing; I look at that as – in a certain respect, as being a good thing because it means our testing is much better."

25 May 2020: (In a tweet): "**Great reviews on our handling of Covid 19, sometimes referred to as the China Virus**…. And got no credit for so doing."

(27 May 2020: more than 100,000 people have died from the virus in the US.)

(11 June 2020: confirmed cases topped 2 million.)

25 June 2020: (In a televised virtual town hall): "So, we have more cases because we do the greatest testing. **If we didn't do testing, we'd have no cases**."

20 July 2020: (In a tweet): "We are United in our effort to defeat the **Invisible China Virus**, and many people say that it is Patriotic to wear a face mask when you can't socially distance. There is nobody more Patriotic han me, your favourite President!"

21 July 2020: (In a tweet): "You will never hear this on the Fake News concerning the **China Virus**, but by comparison to most other countries, who are suffering greatly, we are doing very well – **and we have done things that few other countries could have done**!"

(23 July 2020: Confirmed cases hit 4 million in the US.)

(29 July 2020: US deaths attributed to the virus surpassed 150,000.)

4 August 2020: (In a tweet): "With the exception of New York & a few other locations, we've done MUCH better than most other Countries in dealing with the China Virus. … The fake News is working overtime to make the USA (& me) look as bad as possible!"

9 August 2020: Confirmed cases in the US topped 5 million.

31 August 2020: (Virtual Nevada tele-tally): "I mobilized the largest response since World War II to fight the China virus and we are really doing well. Our numbers are excellent, really really good, and hopefully, **we're rounding the final turn of that disaster given to us by China**."

(31 August 2020: US Confirmed cases topped 6 million.)

4 September 2020: (Trump at a coronavirus briefing): "So, on the China virus front, the nations of Europe have experienced a 38% greater excess mortality than the United States … A lot of you don't want to report that… The job we've done is incredible."
(For a critique which shows that Trump was wrong, see Aron and Muelibauererm, 2020.)

19 September 2020: (Rally in Fayetteville, North Carolina): "**We will end the pandemic from China**, We will end our – **our plague from China**."

22 September 202: (Interview with a Detroit news station): "But we have done an incredible job, and we're doing an incredible job. And, uh, we will be, uh, we're, in my opinion we're rounding the turn."

(22 September 2020: **Deaths in the US from the virus surpassed 200,000.**)

25 September 2020: (Rally outside an airport in Newport News, Virginia): "[W]e did a hell of a job. And they'll compare us to Europe and we did very well but now that Europe is exploding again, and we don't want to talk about it."

(25 September 2020: **The US confirmed case count topped 7 million**.)

29 September 2020: (Presidential debate in Cleveland, Ohio): "When needed, I wear masks. …"
Member of Trumps family were not wearing masks at this event.

(See FactCheck 18 March 2020, 2 October 2020 in the main for data above in respect of the USA.)

(Given that the US constitution is a union of federated states, there was no equivalent of a national lockdown. It was left to individual states to declare a state of emergency together with a pick-and-choose menu of measures, such as stay-at-home, face coverings in public, gatherings beyond a certain size banned, closures of schools, bars, restaurants, non-essential retail outlets. 23 states had stay-at-home orders with New Jersey

(21/03/2020-09/06/2020) being the longest lasting 80 days, followed by New Hampshire (27/03/2020-11/06/2020) with 76 days. See Wikipedia June 2020.)

4 November 2020: 100,000 new cases reported in a single day for the first time, which led to a severe shortage of N95 face masks at health care facilities. (See AMJC 1 January 2021.)

14 December 2020: First Covid-19 vaccination (Pfizer-BioNTech) took place. **Death toll topped 300,000 in total**. (See BBC News 14 December 2020.)

20 September 2021: See Table 1 for casualty figures up to this date for the USA and other selected countries.

UK

29 January 2020: **UK described its first two cases.** (See BBC 29 January 2021; but page was no longer found on 22/09/2021.)
Chief Medical Office for England said that the UK was well prepared for the outbreak and that contact tracing was underway. (At that time, only 177 people had been tested for the virus.)

29 Jan.-10 Feb. 2020: Sage UK was formed whose *raison d'être* was to give scientific advice to the UK government. Sage advised the government that the occurrence of asymptomatic transmission cannot be ruled out. (See Sage 26 June 2020.)

31 January 2020: Two people (a family arriving from China) had been confirmed to be ill with the virus.

6 February 2020: A third person who succumbed to the virus had stayed in a ski resort in France.

10 February 2020: Five more people tested positive, linked to the person who stayed in the French ski resort. **The government declared that the virus was a "serious and imminent threat to public health" and empowered itself to forcibly quarantine people**.

13 February 2020: The first case was confirmed in London bringing the total to nine in the UK.

27 February 2020: First case was diagnosed in Northern Ireland, with a case in Wales the following day.

(End of February 2020: a total of 23 confirmed cases in the UK)

1 March 2020: Greater Manchester had its first confirmed case in a patient who arrived from Italy; 11 were confirmed in Leeds, Bradford and Essex.

2 March 2020: Scotland announced its first confirmed case.

3 March 2020: Epidemiology, Imperial College, London as a result of its modelling, **published five recommendations**: home isolation of confirmed cases, home quarantine of household members of cases, social distancing in general and of the elderly in particular, closure of schools and universities. (See MRC Centre for Global Infectious Disease Analysis, Imperial College, Centre for the Mathematical Modelling of Infectious Diseases, LSHTM.)

5 March 2020: First coronavirus death at a hospital in Berkshire of a woman in her 70s with underlying health conditions.
The PM, **Boris Johnson**, with 85 confirmed cases in the country, declared that there was **no need for drastic regulations**, just "**take it on the chin**" and allow the virus to spread through the population, without having to resort to "draconian measures" such as cancelling public events and gatherings or closing schools. (See *Fullfact* 10 March 2020; Edzard Ernst 14 March 2020.)

7 March 2020: The UK government advised people with symptoms to self-isolate. (See *The Guardian* 9 March 2020.)

10-13 March 2020: The world-renown Cheltenham horse racing over four days went ahead with average daily attendance of 65,000 with 35 new cases confirmed following the event. The UK government claimed that "The Science" did not advise against it". **The government encouraged Cheltenham organisers to go ahead**, with the culture secretary defending the decision again on Monday 20 April 2020: "The risk at mass gatherings was no greater or less than it would have been in pubs or restaurants, and the advice at that point was that we did not need to ban mass gatherings". (See *The Guardian* 21 April 2020.)

11 March 2020: Liverpool Football Club played host to Aletico Madrid with 3,000 fans of the Spanish team arriving in the city in support of its own side, with more than **50,000 packing the stadium** at Anfield. (See INews 21 April 2020; BBC News 26 May 2020.)

(Other countries including those in the EU had already banned such crowd-drawing events.)

12 March 2020: The UK government ordered **community testing and contact tracing to stop in order to concentrate testing in hospitals**. (See *The BMJ* 6 May 2020.)

The UK government stopped policy of test, contact, trace and community testing for coronavirus due to limited capacity, thereby going against the best international scientific advice. (See INews 19 May 2020.)

As more cases emerged, the PM said he would be holding daily press conferences to update the public on the government's response to the spread of the virus.

13 March 2020: The Chief Medical Adviser to the government, Dr Patrick Vallance appeared to **advocate herd immunity**, saying that the goal was to aim at 60% of the population being infected while minimising the exposure of the most vulnerable in the community. (See BBC News 20 July 2020.)

14 March 2020: In an open letter to the government, **229 scientists** covering disciplines from mathematics to genetics (though not including leading authorities of the spread of infectious diseases) urged the government to take stronger measures to combat the viral outbreak; they criticised the proposal to pursue the herd immunity strategy. The Chief Medical Adviser to the government denied the charge of pursuing herd immunity.

More than **200 behavioural scientists** in another open letter to the government said the government should not assume that "behavioural fatigue" would necessarily kick in, as people had found themselves under exceptional circumstances; on the contrary, radical behaviour change was compatible with the perception of increasing danger to health and well-being; as stronger measures would save many lives, the government should not avoid them in the absence of real evidence about behavioural fatigue.
(See BBC News Science and Environment 14 March 2020.)

c 15 March 2020: The UK Epidemiology teams at Imperial College and London School of Hygiene and Tropical Medicine, using mathematical modelling arrived at scenarios which in the end **convinced the UK government to suppress and control the virus through Lockdown**. (See *The Forum* 2021.)

16 March 2020: Government introduced social distancing measures: people should work from home, if possible, avoid pubs, clubs, theatres and other such venues, avoid all unnecessary travel. This was in response to Sage's prognostication about the upward curve of infection. (See Transcript of the speech 16 March 2020.)

17 March 2020: Rishi Sunak, the Chancellor announced a £330 billion loan package to businesses and smaller firms facing closure as a result of social distancing measures.

18 March 2020: All schools to close in the UK from 20 March 2020.

19 March 2020: The UK MP and Secretary of State for Health and Social Security (Matt Hancock) ordered hospital **to discharge patients to care homes without testing for COVID-19** in order to make room for admitting anticipated COVID patients to hospitals. (See BBC 22/06/2020.)

(Office for National Statistics recorded **654 Covid-19 deaths in Welsh care homes, accounting for 28% of all coronavirus deaths in Wales**. NHS England instructed hospitals to free up 15,000 beds in advance of the first wave of coronavirus between March and August 2020, with approximately 25,000 patients sent to care homes some of whom were not tested; some **16,000 care home deaths were linked to Covid-19** following the move. (See *The Independent* 27 October 2020.) (Spiegelhalter and Masters 2021, Chapter 11 says: "The pattern in care homes tells a strong story: three was a massive peak of **over 26,000 excess deaths** in the first wave, after vulnerable care-home residents were inadequately protected.")

20 March 2020: PM announced closure of pubs, restaurants, theatres and gyms; the Chancellor outlined the furlong scheme which would pay 80 per cent of the workers' wages if they could not work because of the virus.

23 March 2020: **PM announced first full Lockdown** which came into force on 26 March 2020. One was allowed to leave the house for (a) essential shopping, (b) exercise once a day, (c) medical needs or (d) to go to work when working from home was not feasible.
PM said to stay at home unless one absolutely had to venture out "in order to protect our NHS and save lives". (See PM's address to the nation 23 March 2020.)

Deaths stood at 335 and confirmed infected cases at 6650. (See *The Guardian* 23 March 2020.)

25 March 2020: The Coronavirus Act 2020 got Royal Assent.
This **first Lockdown, from this date till 4 July 2020** (when most restrictions were lifted) **lasted approximately 101 days.** (See House of Commons Library 30 April 2021; Timeline of UK coronavirus lockdowns, March 2020 to March 2021.)

31 March 2020: Both the PM and the Health Secretary tested positive and self-isolated.

3 April 2020: The first Nightingale hospital was opened in East London, 9 days after announcement of building such facilities. (See BBC 17 April 2020.)

5 April 2020: PM admitted to hospital and the following day was taken to intensive care where he was treated over three days; was discharged from hospital only on 12 April 2020.

9 April 2020: A total of 900 coronavirus deaths occurred in hospitals across England, the highest daily death count so far.

12 April 2020: Figures released showed that a further 737 confirmed cases were reported taking the total well past 10,000 to 10,612.
Hancock announced the development of a new contact tracing app.
A Nightingale hospital opened in Manchester.

22 April 2020: Hancock told MPs that "we are at the peak" of the outbreak in the UK. He outlined five tests to be met before any changes to Lockdown would be made: these include steady decrease in new cases and deaths as well as overcoming problems with testing and PPE.

23 April 2020: First human trials of a vaccine began at Oxford University.

28 April 2020: **ONS figures showed that a third of coronavirus deaths in England and Wales took place in care homes; about 2,000 care home deaths were recorded for the week ending 17 April 2020 and the number of deaths from all causes in care homes was nearly thrice the number recorded three weeks previously**.

End of April: PM announced that the UK was "past the peak" of the outbreak.

5 May 2020: Figures showed that **the virus death toll stood at 29,427, the highest in Europe and the second highest in the world**. A government minister challenged such figures, saying that comparisons between countries was not possible.

10 May 2020: PM said lifting of Lockdown would be done in stages.

23 May 2020: A prominent aide to the PM, Dominic Cummings was reported as having violated the Lockdown guidelines regarding travel; Cummings denied violation; PM accepted Cummings' denial.

28 May 2020: NHS Test and Trace scheme launched – anyone with symptoms was asked to do a test and if found positive, then contact tracing would kick in.

29 May 2020: The Chancellor announced that the furlough scheme would end in October.

1 June 2020: Government moved to remove further restrictions, allowing people to meet, up to six in number from separate households in outdoor space.

13 June 2020: Professor Neil Ferguson, an epidemiologist, who advised the government until his resignation, claimed that as many as half of the lives lost to the virus in the UK could have been avoided if Lockdown was implemented earlier.

18 June 2020: Hancock announced that the NHS app would be abandoned in favour of commercial apps designed by Apple and Google.

23 June 2020: The PM said this would be the last Downing Street daily briefing on the outbreak.

5 July 2020: The UK MP and Secretary of State for Health and Social Security, Matt Hancock claimed that on 19 March 2020 when he ordered patients from hospitals to be discharged into care homes "**it was not known about the asymptomatic transmission of this disease, because no other coronavirus transmits asymptomatically, is my understanding**" "**This point about asymptomatic transmission was something that the whole world was learning about in that period but we did not know about**." (See BBC News 5 July 2020.)

8 July 2020: **Scientists expressed anger at claim by Hancock's claim that asymptomatic transmission was not known to science at the time he ordered the discharge of patients from hospitals to care homes** without testing for Covid-19. Minutes of Sage meetings as early as 28 January, and again on 10 February 2020 showed that Sage warned: "Asymptomatic transmission cannot be ruled out and transmission from mildly symptomatic individuals is likely." **Such warnings were made repeatedly by Sage throughout February 2020**; on 26 March 2020 Professor Yonne Doyle told MPS asymptomatic transmission was a "crucial issue"; Professor Deepan Pillay, a professor of virology at University College London said: "It has been well recognised for many, many years that you can have respiratory virus infections that can be asymptomatic, that's a general principle." (See *INews* 8 July 2020; Channel 4 FactCheck 23 March 2021.)

The UK government announced the Eat Out to Help Out Scheme (EOHO) following the lifting of the first Lockdown by 4 July 2020. This scheme was the brainchild of the Chancellor, under which the Government provided 50% off the cost of food and/or non-alcoholic drinks eaten in at participating eateries UK-wide, Monday to Wednesday from 3 to 31 August 2020. The discount was capped at a maximum of £10 per person.
(See House of Commons Library, 22 December 2020.)

(Did EOHO contribute directly to increase COVID-19 infection? See FullFact 5 March 2021for a nuanced analysis of the evidence available.)

14 September 2020: The Covid-19 situation worsened and restrictions were re-imposed with the new "rule of six" applying both indoor and outdoor spaces – eleven days later, pubs, bars and restaurants had to shut between 10pm and 6am. A three-tier system of restriction was also imposed. (See House of Commons Library, 30 April 2021; INews 23 March 2021.)

5 November 2020: The **second national Lockdown** was announced – non-essential high street businesses were ordered to close and people were prohibited from meeting those who did not form part of their support bubble; people were allowed to leave home to meet one person from outside their support bubble, but outdoors only. (See House of Commons Library, 30 April 2021.) This lasted four weeks.

12 November 2020: Dame Sally Davies (former Chief Medical Officer for England & Chief Medical Adviser to the UK governments since June 2010) in an interview with *The Daily Telegraph* admitted the following. c 2015 she asked Public Health England (PHE) about preparing for a coronavirus (SARS) pandemic, **she was told that such disease would "never travel this far in big numbers" from Asia, that such a virus would die out before it could reach the UK**. This implies that PHE would have given the government the wrong advice; such wrong advice could explain why proper plans for mass testing and contact tracing were not put in place, strategies critical to fighting a SARS pandemic. (See *The Daily Telegraph* 12 November 2020.)

24 November 2020: Government announced that for the Christmas period - between 23 and 27th December 2020, travel between tiers would be lifted; a fixed bubble up to three households would be permitted to meet at home as well as at place of worship or any outdoor public space. (See GOV.UK 24 November 2020.)

2 December 2020: **The second Lockdown ended,** replaced by a strengthened tier system. (See *INews* 23 March 2021.)

The UK MHRA (medicines regulator) announced approval of the first Covid-19 vaccine, the Pfizer-BioNTech vaccine.

Both Pfizer-BioNTech and Moderna vaccines claimed 95% efficacy in their Phase III trials. In this pandemic, the world of medicine had achieved the distinction of producing vaccines which worked in record time – the measles vaccine took 4 years.
(See *Biospace* 3 December 2020.)

The tier-system (first introduced on 14 September 2020) was re-introduced. Two weeks later on 19 December the PM introduced a fourth tier; by 30 December 2020, 75% of the country was placed under tier four restrictions, the most severe. (See House of Commons Library, 30 April 2021.)

8 December 2020: First person to be vaccinated, given the Pfizer-BioNTech vaccine: a 91-year-old woman. (See BBC News 8 December 2020.)

16 December 2020: With Christmas approaching, the PM decided to relax restrictions over the festive season between 23 and 27 December, permitting a maximum of three households to meet up. **The announcement occurred against a backdrop of a further 125,161 cases reported on 16 December 2020, along with 612 deaths** within 28 days of a positive test. (See BBC News 16 December 2020.)

People were told to spend just one day with family rather than the initially proposed five.

(The first patient with the Delta variant was identified in December 2020 and this variant soon became the predominant strain worldwide, especially in India, UK, USA. In the UK, the situation was caused primarily by the failure to test travellers arriving from abroad in March and April 2021; this flaw was accompanied by a failure on the part of the government to prevent contacts of known cases spreading the variant in the community. See INews 18 September 2021.)

Week of 31 December 2020 to 6 January 2021:

The weekly statistics for NHS Test and Trace (England) reported a 21% increase (388,037) in the number of people testing positive compared with the week before. (See Department of Health and Social Care StatisicalBulletinv0-00.)

4-6 January 2021: **PM announced third national Lockdown**, with schools, pubs, restaurants, non-essential retail outlets told to close and one was ordered to stay at home – see INews 23 March 2021.

(Significantly, this period followed the Christmas 2020 relaxation of social distancing rules during the festive season.[4])
The four-tier system was not holding up against the virus, as a new variant was spreading in the population. The UK government reintroduced for **the third time Lockdown**, whose rules were like those of the first Lockdown in March 2020. (See House of Commons Library, 30 April 2021; *INews* 23 March 2021.)

8 March 2021: **The third Lockdown began to wind down in four stages**, with the fourth stage beginning from 21 June 2021. (See House of Commons library, 30 April 2021; INews 23 March 2021.)

11 May 2021: PM announced instituting **an inquiry into Covid-19 in the UK which, however, would only be carried out the year after, 2022**. Neither did he specify what sort of inquiry it would be. (See Mulgan 15 September 2021.)

9 July 2021: Declared **"Freedom Day"** when all the restrictions of the third Lockdown would have been removed.

(See also *Manchester Evening News* 15 August 2020 up to this date.)

20 Sept 2021: See Table 1 for the casualty figures up to this date for the UK and other selected countries.

7 October 2021: Released under Freedom of Information Act, a report called "Exercise Alice" (the Government had earlier refused to release it). Exercise Alice was commissioned by Dame Sally Davies – see 12 November 2020 in this Chronology. It was a desk-top study using Mers-CoV as the "target" coronavirus carried out in 2016.
Dr Moosa Qureshi who obtained access to Exercise Alice under Freedom of Information Act quoted as saying: "The fact that Covid-19 is a novel type of coronavirus is irrelevant – every pandemic is different. But the lessons of Exercise Alice were generally applicable to coronaviruses including Covid-19, they were agreed by general consensus, and both political leaders and NHS England executives failed to implement that consensus."
(See *The Guardian* 08/10/2021.)

12 October 2021: A House of Commons inquiry report involving two committees, science and technology and health and social care, initiated by two Conservative MPs (Jeremy Hunt and Greg Clark) published today. General conclusions arrived at: "For a country with a world-class expertise in data analysis, to face the biggest health crisis in 100 years with virtually no data to analyse was an almost unimaginable setback;" that it was too UK-centric in its approach, shutting out alternative views from elsewhere, particularly east Asia and also Europe. Its major specific charges of failure are: (a) slower to lock down than several other European countries; (b) to launch a successful test and trace operation such as those undertaken by east Asian countries; (c) to introduce early strict border controls; (d) to rely on only certain scientific advisers but with little evidence of "sufficient challenge" of "the assumptions behind any scientific advice given, particularly in a national emergency".
(See *Financial Times* 12 October 2021; *The Guardian* 12 October 2021.)

Number of deaths at respective dates of lockdown in selected countries (counting deaths since the day of the first death) bears out failure (a)

China (23/01/2020)/17 | Spain (15/03/2020)/288 | Italy (09/03/2020)/463
UK (23/03/2020)/335 | France (17/03/2020)/419

See Table 1 for other relevant figures to bear out the catalogue of failures.

Matters of terminology and of science embroiled with matters of politics and geopolitics

Let us start off by looking at the distinction between **an epidemic and a pandemic** and assessing whether **such a distinction ought to be clearly made**.

Naturally, before all else, we need to define these two terms: "epidemic" and "pandemic. At first sight, there appears no ambiguity about the definition of "epidemic"; however, even mild probing shows that there is. Both

[4] Details from Spiegelhalter and Masters 2021, 64 are: "Estimated incidence reached a maximum at Christmas 2020, when around one in 500 people in England were getting infected each day (99,1000-115,400 individuals). The minimum came in July 2020, with about one in 30,000 people per day (around 1,700). Rates were probably higher back in March 2020, but the survey had not started then."

flu and obesity are said to be epidemics, yet the former is infectious and caused by a virus, whereas the latter has nothing to do with infection or bugs. For instance, one article in a journal (see *Medical Hypotheses* 2020) is entitled: Will an obesity pandemic replace the coronavirus disease-2019 (COVID-19) pandemic? Another important publication endorsed by the CDC (USA) 2021, unlike *Medical Hypotheses*, appears to sanction the narrower definition of the term, excluding say, obesity from its remit – see *Principles of Epidemiology in Public Health Practice*, Third Edition, Lesson 1. An epidemic (using the narrow definition) is simply about the occurrence of an infectious pathogen affecting a significant proportion of the population in one country. On the other hand, the term "pandemic" is not ambiguously used, as it simply means the infectious condition associated with an epidemic spreading to a wider trans-national geographic region (several other countries being involved) and affecting a significant proportion of the population, causing public health concern. It follows that COVID-19 qualifies to be a pandemic. As of 17 September 2021, confirmed cases were: 226,844, 344 and deaths: 4,666,334 in regions across the world – Americas, Europe, South-East Asia, Eastern Mediterranean, Western Pacific, Africa. (The Merriam-Webster Dictionary helpfully points out that while one can say that a pandemic is a kind of epidemic, an epidemic is not a kind of pandemic.)

PHEIC and pandemic: what hangs upon a name?

WHO initially did not use the word "pandemic"; instead, it correctly used the official word whose acronym is **PHEIC** (Public Health Emergency of International Concern) on **30 January 2020**. The data on that day pertaining to the novel illness stood as follows: 83 cases in 18 countries had been confirmed with 7 countries having had no history of travel in China as well as three countries outside China had also reported human-to-human transmission. Yet, except for countries in the Asia-Pacific region, the rest of the world appeared to have taken little or no interest in the declaration. This curious stance persisted even as the virus spread rapidly which alarmed WHO to such an extent that, in the end, on **11 March 2020** (for data details outside China, see WHO 12 March 2020), its D-G abandoned the term "PHEIC" for the term "pandemic". There was an interval of just over 40 days before some leading countries and economies (USA and UK) outside the Asia-Pacific area began to respond; from the epidemiological standpoint when an infectious disease is involved, 40 days is like an eternity, great news for the virus, but bad news for us humans.

This unfortunate situation gave rise to a blame game? A handy target in view was WHO and its D-G. If only he hadn't used official jargon but called "a spade a spade", everyone would have sat up and taken serious notice of the threat posed by the new viral phenomenon to mankind and acted immediately in response. (See for instance, *Nature* 23 January 2021.) **Really?**

Let us straightaway remind ourselves that WHO's announcements, declarations, documentations and so forth are not primarily intended for the person-in-the street, but for the officials, bureaucrats and the ruling elites of the member states which make up the organisation as part of the UN. In particular, they go in the first instance to those officials in charge of health in every member state of WHO. No ordinary person in the street, who is of sound mind, would bother or be expected to follow such documentation – one can say with confidence based on a rich record of evidence down the long corridors of history that your ordinary lay-person, even those with high educational achievements and qualifications would not care to spend their spare time gemming up on such documents. The health officials in each member state could and should have translated "PHEIC" into its vernacular. In standard English, that term happens to be "pandemic", in Swahili it is "janga", in Hindi it is "vashvik mahamari", in Arabic it is "gaiha", in Chinese it is "da liu xing bing". However, one must also point out that, for instance, Japanese has simply phoneticized "pandemic", writing it in its own non-Latin alphabetic (katakana) script, Russian in its own non-Latin Cyrillic alphabetic script, Persian in its own non-alphabetic script, and Malay as well as Indonesian have simply domesticated it using the Latin alphabet respectively as "pandermik" and "pandemi". Human languages are rich and complex; WHO as an international body needs to transcend national linguistic boundaries in its official communication. WHO is a specialized agency of the UN; the UN uses six official languages (spoken and written), namely, Arabic, Chinese, English, French, Russian and Spanish. Of these six, only Arabic and Chinese use their own respective terms which have nothing to do with the phoneticisation of what in English is called "pandemic". (This word itself comes from two Greek words; "pan" and "demos" which literally means "pertaining to all people", "common", "public". In this sense, one could say that folk music is "pandemic" but it has nothing to do with the sense which the word in English means.)

Peering into the philological box is often like opening Pandora's box and in general is best avoided. That is why international organisations like WHO have to resort to its own official, technical language. In other words, if one must blame some party, then blame the officials in the relevant ministries of WHO's member states for having failed to translate "PHEIC" into the vernacular for their political masters. However, I have no evidence for blaming the bureaucrats for dereliction of duty; for all I know the bureaucrats might have conscientiously done just that. It was their political bosses who chose not to listen, pretending that their civil servants had been incompetent and negligent. Until leading civil servants in leading Western countries choose to reveal the truth long after their retirement when they might spend their twilight years scribbling their memoires in which they might spill beans,

we would never know. Or when and if the Official Information Act of these countries grant access to a request for some relevant minutes of key meetings of politicians and top civil servants about COVID-19, we would never know.

Let's concentrate first on the epidemic, said to have broken out in Wuhan in December 2019, the cause of which today is referred to as the Wuhan variant of the virus. (See Institute for New Economic Thinking 19 August 2021.) That epidemic in Wuhan-China occurred between late December 2019 and early April 2020, maximally lasting four months (or even two and a half months if one were to date it more stringently from its Lockdown on 23 January to 8 April 2020).

For want of a more precise agreed criterion to select a date, let's say that the viral pandemic could be dated to 30 January 2020 when WHO declared a PHEIC. In late September 2021, the PHEIC/pandemic is still carrying on, a full 18 months after the official end of the epidemic in Wuhan-China. The virus had mutated and evolved, from the Wuhan variant to the Alpha and now the Delta variant, a variant which is more aggressive as it transmits more readily in spite of the success of the vaccination strategy in certain advanced economies such as the US and the UK. (See Institute for New Economic Thinking 19 August 2021.) **This pandemic should not be lazily confused with the Wuhan-China epidemic**.

The game of blaming Others appears to be at play in causing this confusion. Two parties are being cast as the villains of the piece in this new denouement: WHO and China.

Let's first look at the charges made by Donald Trump, the 45th President of the USA from 2017 to 2021. (See Chronology USA above.) To sum up his shifting comments and his "analysis", one could divide them into four stages:

(1) Initially he denied that the virus had arrived in his country.
(2) When it was more difficult to deny given mounting evidence, he shifted to saying that it was nothing serious, that people should not be hysterical or rushed into panic mode (blaming the Democratic Party as the virus-mongerer), assuring that the country was well prepared to handle the situation.
(3) Suddenly on 13 March 2020, in the face of mounting serious epidemiological evidence, he (or his officials) switched to declaring a national emergency.
(4) By mid-April 2020, he had decided to blame WHO which "pushed China's misinformation about the virus" by withdrawing the country's funding from the organisation which together with China were responsible for the pandemic and its resulting deaths ("so much death has been caused by their mistakes" – see US President announces "halting funding" of the WHO.)

<u>How to critically assess the blame-game</u>

Are these charges justified when judged against the evidence provided by Chronology China and Chronology WHO set out above? [5] They are not and for the reasons, briefly set out as follows:

Since 31 December 2019, the WHO China Country Office had been kept informed by Wuhan-China, and WHO headquarters right at the very beginning of January 2020, had issued regular reports about the epidemic in Wuhan-China and guidance on how to cope based on the Wuhan-Chinese experience, **a whole month before it declared a PHEIC** on the penultimate day of January 2020.

On 14 February 2020, WHO's D-G urged the world to seize the limited window of opportunity, to act quickly and adopt a "whole-of-government approach", "to be guided by solidarity, not stigma". At the press conference of the WHO-China Joint Mission on 24 February, the D-G repeated in general what he had said 10 days earlier; this time he elaborated, that success depended on "fast decision making by top leaders, operational thoroughness by public health systems and societal engagement." (See also *Nature* 25 August 2020.)

When response still remained weak, on **11 March 2020**, he reminded the world that it was in a pandemic; this time, he didn't use the technical term "PHEIC" but the English term "pandemic" when he delivered his speech in the *lingua franca* of our times, that is, English.

The following question poses itself in the light of the above data. Why did Trump who was so positive towards China and who, on behalf of the American people, from the bottom of his heart proffered fulsome thanks to President Xi Jinping of China on **24 January 2020**, suddenly had done a hundred and eighty degrees turn around against China (and also WHO)? In addition, from denying there was a pandemic, he claimed on 17 March 2020 that he had always known that the pandemic was real!

[5] According to Chronology WHO, one may infer that WHO did make one bad mistake regarding the nature of the viral disease. On 20 March 2020, it declared that the virus was not airborne, a view which it did not change till more than a year later on 30 April 2021. The fault did not lie in getting it wrong in the first instance, but in not correcting it as new evidence (scientifically authenticated) came in to replace the old – see Spiegelhalter and Masters 2021, 25.

Two hypotheses come to mind: (a) that the 45th US President was either suffering from temporary amnesia, that advanced senile dementia had set in, that coherence and logic had never been his strong suit or (b) that he had suddenly realised (having been sold the strategy by his advisers) that great political mileage could be got out of **weaponizing the viral outbreak** in the national political context as well as very importantly the geopolitical context in which the US has perceived that the country could be losing its historic supremacy and hegemonic control of the world, a status which appears to be challenged by the emergence of China as a rising economic power. Such a stance once adopted dictated that Trump's semantics even altered whenever he opened his mouth or whenever he typed into his machine to mention anything about China. From latish July 2020, he referred to the virus as "the Invisible China Virus" (and also linking the defeat of the virus on American soil as an act of patriotism against an alien invader), or more simply "the China Virus". On 31 August 2020, he even said that the viral outbreak and its consequences were a "disaster given to us by China"; on 19 September 2020, he addressed a political rally in North Carolina in these words: "We will end the pandemic from China, We (sic) will end our – our plague from China".

WHO's D-G was well aware that the West in general and the USA in particular would find it hard to accept that China had successfully controlled the Wuhan-China epidemic; he more than hinted at the problems on 24 February 2020 when he stressed that "much of the global community is not ready in mindset and materially, to implement the measures that have been employed to contain COVID-19 in China". He was right in his prediction. The USA, or at least the America led by Trump was not ready; however, he hadn't foreseen that Trump and his followers would actually turn upon the organisation he has led/leads and upon China to demonise them both in no uncertain terms.

And China? What had China done to earn Trump's late wrath? Apart from keeping WHO informed and through WHO keeping the rest of the world informed, Chinese scientists had also kept the world informed about the results of their studies and investigations regarding the new coronavirus, the most important of which was the decoding of the **genome of the virus as early as 5 January 2020**. The lead scientist of this research team even uploaded it directly to the US NCBI on the very same day as he informed the Wuhan Central Hospital and contacted China's Ministry of Health. The Chinese scientists involved in this project chose to publish their findings in a foreign science journal; ***The Lancet* published them on 29 January 2020**. (The knowledge about the genome of the virus was necessary to any attempt to design and construct a vaccine against the viral disease; upon receiving such knowledge, WHO then on 11 February 2020 named the new illness COVID-19 and the coronavirus causing it SARS-CoV-2.) In other words, the Chinese scientists did not choose to confine such knowledge to China, nor did the government in Zhongnanhai in Beijing order them to stop publishing abroad, in foreign publications. *The Lancet* had also published other relevant and very significant investigations from Chinese scientists such as on 19 January 2020, **24 January 2020 (human-to-human transmission of the virus in Wuhan)**, 18 April 2020. Chinese scientists published other important findings in other foreign journals, such as the *New England Journal of Medicine* (*NEJM*) Online, published on **29 January 2020** the analysis based on the first 425 cases in Wuhan also of human-to-human transmission. On **21 February 2020**, the *Journal of the American Medical Association (JAMA)* published the work of Chinese scientists about the **asymptomatic transmission** of COVID-19.

One must bear in mind that journals such as *Lancet*, *NEJM*, *JAMA*, *Nature* and others operate a peer-review system. With hot topics such as those pertaining to the coronavirus epidemic and pandemic, to speed up communication, some operate a preprint system (that is, a version which has not yet been subject to peer review); the authoritative version after peer-review, even with the best will in the world takes up to three weeks, as the reviewers have day jobs to cope with. Of course, the bush telegraph exists in the international scientific community which performs faster than the official published mode of communication.

Some "patriotic" Chinese voices had indeed expressed disappointment if not displeasure at the thought that Chinese scientists should feel obliged to publish in foreign journals. This is an issue too large to be explored here and now. However, what is germane to the discussion is that Wuhan-China did not appear to be exercised per se about the place of publication but might have been hampered by the time it took for foreign publications to appear. All the same given the urgency of the matter, no doubt, the Chinese authorities, including the office of the Wuhan mayor would have kept an eye on research on the subject in the country, and kept themselves informed by The Science, so to speak. The chronology does not provide indisputable evidence of feet-dragging on the part of the scientists, of local officials and so forth. However, the chronology shows that Wuhan-China declared Lockdown on 23 January 2020 round about the time those publications saw the light of day in foreign scientific journals.

However, some critics have rightly pointed out that the Chinese government should have acted faster than it did and should have locked down Wuhan earlier than 23 January 2020, as the earlier the lockdown, the more lives would have been saved. (See *Nature* 17 March 2O20 which cited an American public-health researcher as saying: "The delay of China to act is probably responsible for this world event" (blaming China for the PHEIC/pandemic) and two model researchers at the University of Southampton, UK claiming that implementation of China's control measures a week earlier could have prevented 67% of all cases, three weeks earlier could have reduced the number of infections to 5% of the total. …") Yes, this strategy works brilliantly well on paper and these criticisms make perfect sense with the wisdom of hindsight, but would it have made such sense in the early days of the epidemic

when The Science did not know as much as it later did about the virus and its "life and likings", so to speak? For instance, The Science did not even have a name for the phenomenon; WHO reported that Wuhan had its first "cases of pneumonia of unknown etiology (unknown cause)" and that by 3 January 2020, a total of 44 patients with "pneumonia of unknown etiology" had been recorded by the national authorities in China. The naming by WHO only took place on **11 February 2020** after The Science had come up with crucial new information about its genome and there was a fuller understanding of the phenomenon.[6]

Let's listen to the comments of an acknowledged epidemiological authority, Jonathan Mayer, professor emeritus at the University of Washington's Department of Epidemiology (see *The Guardian* 13 March 2020). He made the following points:

1. It was "entirely conceivable" that there were cases as early as mid-November 2019 which could be considered under three possibilities: (a) that they weren't detected at the time (but later), (b) that they had been detected but not identified or recognised as a new disease at the time, (c) that they were detected and recognised but the political authorities had suppressed its reporting. He implied that there was no direct evidence of (c) but at best an indirect inference based on reports that whistle-blowers were harshly dealt with. He could have in mind the case of Dr Li Wenliang (see Chronology China for details) [7] who died of COVID-19 in early February 2020.
2. Mayer held that it was highly improbable that "patient zero" could ever be identified; he implied that report of such sightings should not be embraced uncritically.
3. As the signs and symptoms of COVID-19 are non-specific, recognition in the early days especially would not be easy and even today with more advanced testing, one could still mistake it for another disease.

A lockdown is not something any political authority undertakes lightly. Recall the fate of the mayor of Wuhan who apologised for it and resigned, bearing dignified responsibility for such a grave act, **never before undertaken in human history**. It was an act which impacted severely on the lives and livelihoods of 11 million people in the city (not to mention another 7 million in the neighbouring city of Huanggang, giving a total of up to 18 million citizens). At least to me, he bore the responsibility honourably and gladly, justifying it on the grounds that the act would and did save lives. Just before the Lockdown, the Wuhan authorities had done certain investigations (see the Report of the Wuhan health commission made available on **30 December 2020** which began its investigation in response to receiving information from a doctor at the Hubei Hospital of Integrated Traditional Chinese and Western Medicine on **27 December 2020** that he had seen three patients with pneumonia with unknown causes). On **31 December 2020**, Wuhan issued health alert and alerted the WHO China Country Office.

Well, the overall data for the epidemic in Wuhan-China seem to support the view that China had done very well and everyone in China could feel proud of their achievements which would not have come about but for the all-out efforts made to save lives, not to mention the sacrifices of many people, such as front-line medical workers and others – see Table 1 which shows that the metric for Deaths per million population stands at only 3.48 on 20 September 2021.

It stands to reason to expect that the country which bore the brunt of the emergence of an epidemic would suffer the most, as it had no handy or ready rule-book to follow but had to play things by ear very carefully as it went along. On the contrary, countries exposed to the same infectious pathogen in the pandemic which followed ought to get off lighter, as by then relevant data and strategies, relevant scientific understanding would have emerged to fill more if not all the gaps – they would be travelling on an already trodden path, they were not pioneers. Yet surprise, surprise, **the actual data available today severely undermine if not directly contradict such a prediction**. Go to Table 1 again and you'd see that all the other countries singled out for mention have

[6] It is important to emphasise that the focus here in on the time dimension of the trajectory of the epidemic, when it is at the beginning and when it has certainly not morphed yet into a pandemic. Lack of knowledge at $time_1$ is perfectly normal but when more knowledge and evidence have emerged at $time_n$, no-one can then claim ignorance on the part of those who ought to know. Science is engaged constantly in the activity of updating and revising predictions or prognoses in the light of good evidence as that emerges. Science, typically, is a dynamic process and the findings of such a process generally change and are modified as data-gathering is carried on apace. However, this problem of what stage of the temporal spectrum one is looking at ignorance or knowledge should be distinguished from another set of issues also raised by Shrime 2021 where he is concerned with some of the inherent problems lying in the path of doing Science which make Science incapable of producing conclusions which are absolutely certain, as it can deal only with probabilities, not certainty. Spinney 2021 appears to have failed to distinguish these different aspects of complexity by claiming *carte blanche* that "scientists were in the dark at the time of many of the events in question". This claim is only true in the context of say the earlier stages of the epidemic of SARS-CoV-2/COVID-19 but not by the time of the pandemic. See also Philo 2021.

[7] Chronology China re Dr Li Wenliang shows, as far as one can tell, that his history and tragedy, strictly speaking, had nothing to do with the trajectory of the Wuhan-China epidemic. It is regrettable that two over-zealous officers from the security branch of the police station in the city made him sign a statement that he had committed "virus-mongering", so to speak, thereby committing a disturbance of public order. There is no shred of evidence at the time of the charge and later that his conduct had caused even one person in Wuhan to become infected, to die of the viral infection or the citizens of Wuhan to go into panic or hysterical mode. It is highly regrettable, of course, that in carrying out his professional duties, he caught the virus and died of it. Like a lot of front-line workers, he made the supreme sacrifice in serving his fellow citizens.

done worse than China, that countries infinitely smaller than China (Singapore), a country as big as China in population (India), a country with a quarter of China's population and considered to be the top economy in the world (USA), all these judged by the metric of Deaths per million population have done worse than China. A quick back-of-envelope calculation seems to show that the US as well as the UK have each performed several hundreds of times worse than China.

If speed is of the essence in controlling an epidemic/pandemic of an infectious kind, the UK seemed to have fallen spectacularly short of this requirement - it took the UK government roughly **60 days** (29 January 2020 – 23 March 2020) to make up its mind to declare a lockdown compared with roughly **23 days** (31 December 2019 – 23 January 2020) for China-Wuhan to do so. On 23 March 2020, when Lockdown was announced, the total deaths from the viral infection in the UK stood at 335 with coronavirus related deaths rising by 54 in a day and 6,650 confirmed cases – see ITV 23 March 2020; *AJMC* 1 January 2021. When Wuhan-China was locked down on 23 January 2020, there were 17 deaths with more than 500 confirmed cases (see *The Guardian* 23 March 2020). In other words, using the criterion of speed of response to the figures for death and confirmed cases of infection, China could be said to have outperformed the UK. This comparison would go some way towards explaining Table 1.

The COVID-19 protocol lays down physical/social distancing as a significant strategy to pursue. Yet the UK government and other organisations deliberately violated this protocol on three occasions which fuelled spikes in the infection curve:

(a) The Cheltenham horse-racing festival over four days (10-13 March) was permitted to proceed when the crowd each day was said to be 65,000; the government claimed that The Science did not advise against it and its Culture Secretary, Oliver Dowden, defended the decision to allow it to go ahead on 20 April 2020 in these terms: "The risk at mass gatherings was no greater or less than it would have been in pubs or restaurants, and the advice at that point was that we did not need to ban mass gatherings". 35 new cases were confirmed after the event.
(b) An important football match took place in Liverpool on 11 March 2020 before a packed stadium of more than 50,000 spectators. Data in the last week of March show that following this event and those at Cheltenham, these two areas had the highest number of suspected cases.
(c) The PM, playing Santa Claus, relaxed the social-distancing rules for the festive season; the penalty for this festive-making was the imposition of the third national lockdown in the first week of January 2021
.

However, the most shocking act both from the epidemiological as well as the moral point of view happened on **19 March 2020** (a few days before the first full Lockdown on 23 March 2020) when the Secretary of State for Health and Social Security, Matt Hancock ordered hospitals to discharge patients to care homes without testing for COVID-19 in order to make room for admitting anticipated COVID-19 patients to hospitals – **some 16,000, if not more, care home deaths were linked to this move**. To add insult to injury, the same Secretary of State for Health and Social Security on 5 July 2020 claimed that when he ordered "the dumping" of patients from hospitals onto care homes on 19 March 2020, asymptomatic transmission in the case of COVID-19 was not known to The Science. Naturally, this prompted an irate response from medical scientists; the Minister was either lying through the teeth or he was a woeful ignoramus, unfit to occupy his specific high position in government.

On 12 March 2020, owing to limited national availability of testing material, the government ordered testing/ tracing/contacting in the community to stop in order to concentrate resources on testing in hospitals. This went against the best international scientific advice.

Is it then a wonder that the UK ended up (on 20 September 2021) "enjoying" the status of being third in the pecking order, measured by the metric of Deaths per million population, following closely behind its closest ally and best friend, the USA?

While I've pointed out earlier that China could be cut some slack, being in the front-line of the new coronavirus as the country in which the epidemic first emerged, the UK has/had no such excuse as the data, The Science, the examples and experience not only of China but other countries (such as those in the Asia-Pacific region) to act as guide and template were/are available. Yet the UK's PM seemed to have dilly-dallied, not being serious when he should be deadly serious[8] until he fell prey to the virus himself. For a while, he also indulged in silly jingoistic language claiming that any measure the UK undertook was "world beating"! (For a comparable list, see *The Mirror* 6 June 2020.) UK has had three full lockdowns with a total of 79 days. Israel, too, have had three lockdowns with a total of 139 days (see *The Jerusalem Post* 4 February 2021). Sorry Boris, the UK is not "world beating" in this respect. However, Israel's Deaths per million population stand at only 819, roughly two-fifths of the UK casualties.

[8] For instance, he missed the first five meetings called by the Civil Contingencies Committee convened to coordinate different departments and agencies in response to national emergencies, commonly referred to as COBRA. It is correct to observe that such meetings need not be attended or chaired by the PM, but during real emergencies, past PMs had attended. For an account of his movements when he was absent from these five meetings, see *The Daily Mirror* 19 April 2020.

(Grant you, Boris, that the UK has beaten Israel on this round of your game.) I have so far not tracked any country with more than three full lockdowns to date.

Some help from causal reasoning in Anglo-Saxon Jurisprudence to cast further light on the distinction between the Wuhan-China epidemic and the pandemic which follows

Between the ending of the Wuhan-China epidemic in early April 2020 and late September 2021, many events, actors and agencies have intervened which, from the standpoint of causation, have nothing to do with the Wuhan-China chain of events. This observation, however, should not be read as a denial that the virus did in one obvious sense migrate from Wuhan as the epicentre of the epidemic to other countries of the globe. The observation is made to draw attention to a concept in Anglo-Saxon Jurisprudence which postulates that a new intervening act (*novus actus interveniens*) by initiating a new causal chain can supersede the original one.[9] Take the following example which involves a road accident. Imagine Driver A losing attention for a split second behind the wheel and as a result, the car knocks down an elderly person (Z) who falls and lies injured on the road with some damage, to his leg but nothing fatal or difficult to put right with proper medical care and treatment. An ambulance arrives to take Z to the hospital. Unfortunately, the hospital did a very bad job in sorting out the broken leg and as a result, Z has ended with severe limitation in his leg movement. Should Z sue for compensation, whom should he sue, Driver A, the hospital or even both? Is it A or the hospital that has caused Z's present unhappy state?

Driver A's action is a necessary condition for Z's present state of limited mobility; without the car accident, it is quite correct to say that Z would not be in the state he is today. So, is A's careless driving the cause of Z's present disability? On the other hand, if the hospital has not been careless in their care and treatment of Z's car-damaged leg, he would have recovered altogether and be as mobile as he was before the car accident. So, it is the hospital which has caused Z's present state and Z should sue the hospital. The law of tort appears to favour the latter way of looking at the situation, on the grounds that the negligence of the hospital in treating the patient constitutes a new causal chain which serves to sever the link with the first – Driver A, as a result, would get off the hook, and the hospital would be held liable as the new agent.

Apply the insight of tort law thus simplistically outlined and see how the analogy would pan out in the case of China's epidemic as opposed to the pandemic now raging in other countries. It is correct to observe that the pandemic would not have occurred but for the fact that the epidemic did occur in Wuhan-China, just as it is correct to observe in the hypothetical tort outlined above that Z's present disability would not have occurred but for the fact that the car accident did occur. The occurrence of the epidemic in Wuhan-China, Driver A's knocking down Z, each respectively is a necessary condition for the occurrence of the coronavirus pandemic and for Z's state of disability. Each, though respectively, a necessary condition is not sufficient for what happened afterwards. The pandemic could not and would not have lasted for the last 18 months if new events have not taken place, emanating from actors other than those involved in the Wuhan-China epidemic, just as Z's present disability would not have taken place if a new chain of events has not been initiated by actors in the hospital. These new events emanating from new actors serve as the *novus actus interveniens* to terminate the old causal chain. The COVID-19 protocol has come into existence, carefully constructed based on the painful experience of the Wuhan-China epidemic and propagated by WHO and China; if this protocol had not been undermined by politicians in the pandemic countries, for example, led by Donald Trump and Boris Johnson who had/have initiated a new series of actions and events contrary to what the protocol postulates, the pandemic could not have taken off, causing so many deaths in the USA and the UK – to date, the US has suffered nearly three quarters of a million dead and the UK over an eighth of a million dead.

Borrowing the concept of *novus actus interveniens* from jurisprudence can, therefore, cast some light on the distinction between the Wuhan-China coronavirus epidemic on the one hand and the pandemic on the other. The latter may be said to constitute the *novus actus interveniens* which serves to absolve Wuhan-China from blame for the lives lost and the economic damage suffered in the pandemic.

Beyond epidemic and pandemic to their wider political and ideological differences

Looking again at Table 1, it strikes me that apart from China, all the other countries are categorised and recognised as democracies by the Western commentariat and power elites. China is the anomaly. This then presents a puzzle? Is this an accident or is there something more than meets the eye? Another way of expressing the puzzlement is to say that the countries which, historically, have been exposed to Chinese cultural ideas including its Confucian social/moral values, appear to have fared better assessed against the metric of Deaths per million population. Is this also an accident or is there something more than meets the eye?

[9] See Hart and Honoré 2012; *United Kingdom Encyclopedia of Law* 2021.

A partial answer can be found in two other explorations (**Epidemiological Thinking Through the Lens of Different Cultural Perspectives: Mask-wearing as a Case-study**; **In the Context of COVID-19, Differences between China and "the West": Culturally, Politically and Ideologically**).

This exploration has earlier on drawn attention to the difference between China and USA/UK in terms of their respective key societal values. Western democracies celebrate and identify themselves in terms of freedom and democracy. China celebrates and identifies itself in terms of promoting the welfare of its citizens, of pursuing the goal of "socialism with Chinese characteristics". Furthermore, Western democracies are typically two-party systems, while the Chinese political system is primarily a one-party system. This set of political/ideological differences will be briefly looked at, not here but in another exploration as mentioned above.

Conclusion

1. The Select Chronology of Selected Countries may be said to have been methodologically justified and successfully deployed, as it has enabled me to formulate certain hypotheses and to test them against the data collected.
2. These include:
   (a) The key hypothesis which distinguishes between the Wuhan-China epidemic on the one hand and the pandemic on the other.
   (b) Drawing upon the jurisprudential concept from tort law of *novus actus interveniens* to cast further light on the distinction between the Wuhan-China epidemic and the pandemic which follows.
3. 1 & 2 above have enabled one to demonstrate that the blame-game played by certain leading pandemic countries is not justified in terms of general logic, of The Science of Epidemiology and of ethics; that the blame-game amounts to weaponizing the viral outbreak to achieve certain geopolitical as well as national political ends.
4. This means that one can demolish the main myth and other myths associated with it: that WHO and China are "the villains of the piece" and should, therefore, be blamed for the pandemic and all its consequences for society worldwide.
5. An effective strategy to demolish myths is to rely on data about dates and statistics (of infection and death in particular in the case of this viral outbreak). Although no data can ever be said to be objective and above suspicion in all contexts as they have to interpreted, they are the kind of evidence available which one has then to rely on in general; however, one must remain on permanent guard in critically interrogating them.[10]

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[10] See Spiegelhalter and Masters 2021 which point out some of the pitfalls. See also Harford 2021 for general understanding of how figures and data are to be read and critically assessed.

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