INTRODUCTION

Pandemics are a regular feature of human history from ancient times onwards (McNeill, 1976). As major eruptions of the harsh realities of nature into the settled life of civilisations (for it is civilisations that suffer from them, for various reasons), they loom large in historical accounts and the memoirs of those who lived through them. Historically, pandemics have brought about sweeping social, political, and cultural change – or at least they seem to have done so, for the reality is that they give a massive push to movements and trends that were already under way. In the extreme cases, pandemics have figured largely in the collapse of empires and civilisations, as for example in the havoc the bubonic plague wrought on both the Eastern Roman and Sasanian empires in the sixth century (Little, 2006). In the modern world (since around 1750) their impact has been less dramatic but it is still considerable. There have been almost 20 pandemics in the modern era and they have played a central part in the development and growth of the modern state. There is also an inescapable economic aspect to pandemics, in terms of both their dynamics (the way they spread and the reasons why they appear when and where they do), and their consequences, among which economic impacts loom large.

It is important to understand what a pandemic is and how it is distinct from an ordinary and localised epidemic outbreak. The latter is a constant feature of human life. An infectious disease will break out in a particular location and initially spread rapidly among the local population (which may be large). After a while the rate of growth slows down and eventually stops, with the number of cases peaking. There is then an almost equally rapid decline, so the path of an epidemic resembles an inverted V. Sometimes, however, the epidemic spreads widely beyond its original point of origin and becomes extensively dispersed geographically. Such an epidemic is commonly called a pandemic, although strictly speaking that term should be used only for the ultimate case of an epidemic that has diffused so widely that outbreaks are found at roughly the same time all over the populated planet.
2 | THE PHASES OF A PANDEMIC

A pandemic has a different pattern from that of a local epidemic. The disease, which is typically novel and caused by a new or mutated pathogen, appears at one point on the planet. It then spreads along trade routes and travel routes to other parts of the world (Tatem, Rogers, & Hay, 2006). Travellers (tourists today but also pilgrims and business travellers), merchants, and soldiers are historically the major carriers (McNeill, 1976). The transmission at this point is not geographically continuous; instead, the disease spreads along trade routes from one trade hub to another, leaping over intervening territory. This leads to widespread and scattered near-simultaneous outbreaks across the world, which can then in turn lead to further transmission. This is the first phase of the pandemic. Eventually these localised outbreaks subside, in the same way as a truly local epidemic does.

However, in a pandemic that is not the end of the story. The epidemic now enters a second phase, usually called the ‘smouldering’ phase (Viboud, Grais, Lafont, Miller, & Simonsen, 2005). In this phase the disease spreads out from the original foci and becomes much more widely and uniformly dispersed. This phase is marked by scattered outbreaks on a small scale, so the overall number of cases does not rise or does so slowly. Gradually, however, the local outbreaks start to coalesce, and after some time (which, depending on the pathogen, can be anything from a few months to several years) the third phase is entered. This is a second wave of accelerating infection, but much more widely dispersed and uniform than the first one (although some of the areas most hard hit in the first phase get off lightly, because of higher levels of acquired immunity) (Cockburn, Delon, & Fereira, 1969; Kindrachuk & Nickol, 2019). This third phase, or second wave, is typically much larger than the first wave in terms of both the number of cases and the geographical spread, and often does far more damage. With viral pathogens the second wave is often more virulent than the first (this happened for example in the Spanish flu pandemic of 1918–19) but it can be milder (Kilbourne, 2006; Potter, 2001; Spinney, 2018). After the third phase the epidemic becomes quiescent again but it often returns in a third and even a fourth wave. These, however, are almost always milder than the earlier waves in terms of their medical effects.

3 | THE COVID-19 PANDEMIC

How then does the COVID-19 pandemic of 2020 fit into that kind of story? Clearly it is not on the same scale as the truly massive ones of the past, such as the Antonine Plague of the second century (probably smallpox) or the Plague of Justinian in the sixth century and the Black Death in the fourteenth (both of these being bubonic plague). These all killed upwards of 25 per cent of the affected populations, a truly devastating mortality rate (Benedictow, 2018; Horrox, 1994; Little, 2006; McNeill, 1976). By contrast, COVID-19 appears so far to have an infection fatality rate of around 0.6–0.7 per cent (so much milder than those cases but also several times worse than regular seasonal influenza). The medical effect is so far much less than that of the Spanish flu pandemic of 1918–19, although it may end up being slightly worse than in the Asian flu and Hong Kong flu pandemics (1957–58 and 1968–69 respectively). The COVID-19 virus is seemingly less infectious than influenza but has a longer incubation period and a very high proportion of asymptomatic cases, which means it still spreads widely. The major differences from the past are the greater medical capacity available, in terms of both knowledge and actual resources, and the greater administrative capacity of modern states. In 1918–19 local controls,
often sweeping, were imposed, but there were nothing like the national responses seen in 2020 (Spinney, 2018). Policies of lockdown initially and testing, tracing and isolating (TTI) subsequently may smother the smouldering phase and prevent a second wave or third phase this time, holding the line until a vaccine is developed. (Countries that were able to put a programme of TTI in place early on, such as South Korea, have avoided the need for a strict lockdown.)

At the time of writing (May 2020),¹ we still do not know whether we will escape a third phase. One problem is that the development and spread of the virus is at every stage a complex system in the technical sense of that term. That is, we cannot simply extrapolate existing trends, or predict from initial conditions and parameters how things will work out subsequently. In addition, too much is still not known, most notably the proportions of populations that have already been infected and are consequently now immune. What evidence we have suggests an infection rate in most places of between 2 per cent and 20 per cent (Ahlander & Pollard, 2020; Urra, 2020). The problem is that this means populations are a long way from so-called ‘herd immunity’ where the number of susceptible people in a given population is at a level where one case will give rise to fewer than one new case, because of the physical difficulty of finding a vulnerable person (this level is at least 60 per cent for a virus with the known features of COVID-19). All this means that policymakers are operating in a situation analogous to the ‘fog of war’, with incomplete or absent information and constantly and unpredictably changing circumstances. They face an acute knowledge problem, in other words. Given this, it will be a major achievement if controls and other measures do succeed in dousing the smouldering stage of the pandemic.

The experience of the past, and the way pandemics have happened, tell us a number of things. Because the initial spread beyond a locality is a function of transmission along channels such as trade and travel routes (including pilgrimage ones), very widespread epidemics are almost by definition cases where an epidemic has reached every part of an ecumene, that is, a part of the planet that is economically integrated through trade and exchange. Today that means the entire planet. In the past for the entire planet to be reached the pathogen would take several steps geographically, going through the cycle described above in each step (we can see this in the Black Death, for example). Today, because of air travel and things such as Austrian ski holidays, the coronavirus was able to spread from Wuhan in China to the whole planet in a matter of just weeks. (In 1918–19 the time it took Spanish flu to travel from one part of the world to another was measured in months.) All this leads to the conclusion that several features of the world we live in, such as high levels of economic integration and trade, widespread mass travel, and rapid modes of transport, make it much more vulnerable to a true pandemic. To that list we should add such things as the nature of modern livestock farming and acute pressure on wildlife habitats, both of which contribute significantly to the appearance of novel pathogens and transmission from animals to humans.

4 | ECONOMIC EFFECTS OF COVID-19

These and other features of the modern world also mean that the economic impact of an extensive epidemic is going to be much greater than was the case in, for example, 1968–69. International travel is now a much more significant and valuable activity, so its curtailment will have much bigger effects. Much manufacturing and other economic activity now depends on long and complex supply chains that, again, will be disrupted by both the epidemic itself and the
measures taken to contain it. Changes in consumption patterns also make contemporary economies more vulnerable. For example, in the last three decades Americans have taken to eating out more and more, to the point where just over half of the food consumed is eaten in bars and restaurants. These have been closed down but even before then their trade had collapsed. This has had a much bigger effect than would have been the case in 1968, not least because the entire food supply system is now geared up to sending half its output to restaurants rather than grocery stores, and it is extremely difficult to adjust quickly to restaurant closure (Bedford, 2020) There are similar examples in other areas, such as clothing purchasing. Another change is the much greater significance of credit, with far more businesses highly leveraged and operating on very tight margins. This means that a prolonged interruption to normal business conditions will have its effect amplified by finance, in a way that was not true 50 years ago. One social change that also has this effect is the movement of women with children into the labour force in large numbers – this magnifies the economic impact of school closures (Keogh-Brown, Wren-Lewis, Edmunds, Beutels, & Smith, 2009).

All this means that a pandemic such as the Hong Kong flu is going to have bigger effects if it were to happen today than the original did back in 1968–69. The COVID-19 virus is, on the evidence, more medically severe, so we should expect it to have if anything a still larger impact. At first sight it would seem obvious that the measures taken by governments to try to suppress the spread of the virus and head off a second wave (by stamping out the ‘smouldering’ phase) have in turn increased that impact even further, massively so. Certainly, the impact has been dramatic, with a record rise in US unemployment claims and a dramatic rise in claims for Universal Credit in the UK. Most businesses are presently shut down in the UK and elsewhere, and only measures such as the furlough scheme introduced into the UK have prevented a rise in unemployment not seen since the dark days of 1931, given a collapse in GDP that some commentators estimate to be the worst since the 1690s or 1700s (Bruce, 2020; Faulconbridge & Bruce, 2020).

However, initial forecasts indicate that the additional impact of lockdowns is far less than most imagine. There is no clear correlation between the severity of lockdown and the size of the hit to GDP, with countries such as Sweden that have avoided lockdowns and gone instead for social distancing predicted to see a decline in GDP similar to the ones expected in countries that did impose one (Milne, 2020). Moreover, the early signs are that lockdowns may not have had such a dramatic effect on rates of infection and rapidity of spread during the first phase of this pandemic. It seems that it is measures such as effective TTI policy, closing of borders, and successfully protecting vulnerable groups such as the elderly that have had the biggest effect. The tentative but increasingly strong conclusion is that it was the spontaneous responses and reactions of the public that brought about both the medical effect of slower spread and the bulk of the economic impact (this also highlights the fragility of much of the contemporary economy).

5 | OTHER EFFECTS OF PANDEMICS

What kinds of administrative and political effects have pandemics had historically and how might that play out this time? One important point is that pandemics seldom lead to something truly novel: they typically provide a big boost to processes that were already under way. They do not bring down institutions and systems that are in good shape, but they do precipitate the collapse and end of ones that were already in a poor state. So most of the firms or sectors that
go under will be ones that were already having serious difficulty or were already vulnerable, such as retail. We will see the same pattern in politics. The pandemic will lead to a resurgence of nationalism and the nation state, while undermining a rules-based international order and supranational forms of governance. Unfortunately, it will boost the trend towards protectionism and economic nationalism that is already under way. It will also lead to a decline in international integration as supply chains are shortened and production ‘reshored’ in response to revealed vulnerabilities (again, this is already under way). It will almost certainly trigger a financial crisis centred on the unsustainable accumulation of private debt, this again being a case of it providing the push that brings down something that is already on the verge of falling over.

Historically, pandemics have played a central part in the emergence of the modern administrative state, through the creation of modern systems of public health in response to major epidemics. It was the six great cholera pandemics of the nineteenth century that were particularly important for this, leading as they did to governments acquiring extensive powers to inspect, regulate, and register their populations and to the state taking on responsibility for sanitation and providing potable water (Wilford, 2008). They also led to a profound change in the way large towns and cities were administered and subsequently to the development of an extensive and often coercive set of public health programmes, such as compulsory vaccination, as well as health visitors and district nurses to support but also chivvy and push the general public.

It seems likely that the coronavirus pandemic will therefore lead to a reassessment of the extent, power, and functions of government. In some areas this will result in a growth or extension of powers but in others there will likely be a pulling back or withdrawal as public administration is found to be lacking or self-defeating. A lot of regulations, particularly ones to do with medicines and drugs but also things such as occupational licensure (in the United States in particular) are likely to be cut back or abolished. In contrast, surveillance powers are probably going to become more extensive. One likely change is in the area of health services: in most countries (East Asian ones and Germany are the big exceptions) these have come to be dominated by hospitals and therapeutic medicine at the expense of health maintenance and public health (Hawe, Yuen, & Baillie, 2011). This has been revealed as brittle and highly vulnerable to shocks such as a major epidemic (in 2020 it was panic about the pressure on hospital systems that led to the decision to impose a lockdown, in most cases). One area where there will be much debate is over the relative performance and effectiveness of decentralised and localised systems as compared to centralised or national ones: this is actually an area where the evidence can support both sides, with the correct answer differing according to local circumstances.

The pandemic will also have other, less predictable, effects, but some of these can already be discerned and others can be guessed at from historical experience. One rather grim result will be a heightening of international tensions, particularly between China and both the US and Europe. There may be significant consequences for education and higher education in particular. Despite what some hope or fear, there are unlikely to be lasting consequences for pedagogy but the financial and organisational structure of the higher education industry is likely to face dramatic disruption and reorganisation, on a worldwide basis. Another area that will probably see a major impact in some countries is welfare policy, where the idea of a universal basic income, already gaining support of late, is going to move to the centre of debate.

On the historical evidence there will also be unpredictable but extensive cultural effects (Cantor, 2001). Usually there is a simultaneous movement towards both greater seriousness and impatience with intellectual frivolity on the one hand and a desire to live for the moment and take pleasure where it may be found on the other. Other things are simply a matter of
guesswork (or, too often, projection of hopes and fears). Perhaps there will be a revulsion against the way everyday work is organised and away from a system where almost all adults are employed. Perhaps working from home will become a new normal, or alternatively people will be desperate for the company of a workplace. There may well be an uptick in the birth rate: as one person observed to me, if lockdown does not get the UK birth rate back above replacement level, nothing will.

**NOTE**

1For up-to-date information, see Worldometer data at https://www.worldometers.info/coronavirus/

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