Keekok Lee
www.keekoklee.org
30 September 2021

Epidemiological Thinking Through the Lens of Different Cultural Perspectives: Mask-wearing as a Case-study

CDC	Center/Centre for Disease Control and Prevention
JAMA	*Journal of the American Medical Association*
Med. Devices Sens	Medical Devices & Sensors
NERVTAG	New and Emerging Respiratory Virus Threats Advisory Group (UK)
NIAID	National Institute of Allergy and Infectious Diseases (USA)
SAGE	Scientific Advisory Group for Emergencies (UK)
WHO	World Health Organization

Introduction

This chapter will look at the implications of mask-wearing from the vantage point of Epidemiology in the context of moral as well as social philosophy. It will explore some of the complicated relationships, often either ignored or at best glossed over in presenting the problems of mask-wearing during the COVID-19 epidemic and pandemic.

Before embarking on such an exploration, it would be wise to remind readers of its place as a strategy in public health measures. The selective outline offered is as follows:

1. In China, where the epidemic was first officially declared to have happened, mask-wearing in Wuhan, the epicentre, became mandatory in January 2020, followed by Shanghai in February 2020. Before COVID-19, while mask wearing was a common phenomenon in China, this was because people chose to wear masks especially in the winter months when colds were widespread or when pollution levels were high.

   In other areas of East and South East Asia, mask-wearing became mandatory also during 2020 – Vietnam 16 March 2020; Singapore 15 April 2020; South Korea 26 May 2020; Hong Kong 29 July 2020; Taiwan by December 2020.

   In Japan, no mandate was issued but just a reminder that one ought to wear-masks, given that the habit of mask-wearing is very well entrenched. The Hong Kong government, too, could have chosen to issue only a reminder, as people in Hong Kong had taken to wearing masks well before the end of July 2020; however, its government chose to make the matter mandatory.[1]
2. WHO in early April 2020 stated that masks must be won not by the public but by front line health workers, people with COVID-19 symptoms as well as carers of infected people. However, two months later, in June 2020, its position had altered, stating that the general public should wear face coverings, a guideline it has stuck to since. Furthermore, WHO also gives instructions to make your own cloth masks which are effective in the job they are expected to perform.
3. Furthermore, WHO and epidemiologists the world over also emphasise the fact that mask-wearing is only one strategy amongst others which society must practice as part of a combination of measures in order to achieve the desired outcome of lowering the infection rate of COVID-19. These other strategies include physical/social distancing, hand washing, not touching one's own face, and even cleaning of public surfaces for fear of what is called fomite transmission (of the virus staying on hard surfaces such as hand rails, counters, baskets and trolleys in supermarkets after infected people have touched them). However, as medical scientists learn more about the mechanism of transmission, that SARS-CoV-2 transmits primarily by aerosols (and small rather than large droplets), other strategies have been more emphasised which then crucially include mask-wearing, physical/social distancing as well as proper ventilation of indoor spaces.
4. However, in England on 5 July 2021, the government, in the belief that it has successfully rolled out its vaccination programme announced that from 19 July 2021 mask-wearing would no longer be mandatory, but an entirely voluntary affair. However, the Prime Minister almost immediately back-pedalled and changed its language to say that people would, all the same, be "expected" to wear them in crowded indoor areas such as public transport and shops. LfT (London for Transport) said in response it would continue to demand mask-wearing on its different transport networks; the mayor of Manchester also said that its tram network would also continue its mask-wearing policy.
5. In the USA, on 29 February 2020, the Surgeon General proclaimed on Twitter that masks "are NOT effective in preventing [sic] general public from catching Coronavirus…". The director of CDC, in February 2020 also said that healthy people did not need to wear masks, although CDC (USA) revised its recommendations on 3

[1] One should recall that Hong Kong had directly experienced the earlier SARS epidemic of 2003, caused by what today is labelled SARS-CoV-2; the people of Hong Kong, therefore, have taken to mask-wearing well before the present SARS-CoV-2/COVID-19 pandemic was officially declared.

April 2020; and on 14 July 2020, the director in an editorial he co-authored in *JAMA* advocated universal masking. He did the same again on 16 September 2020 when he testified before the Senate Appropriations Committee. In March 2020, the director of NIAID, Anthony Fauci similarly held the view that mask-wearing might make people feel a little bit better and it might even block a droplet, but it's not providing the perfect protection that people think that it is." He changed his mind later by April 2020.

6. A study released in June 2021(not yet peer-reviewed) by the Universities of Bristol, Oxford and Copenhagen analysed the effect of mask-wearing of 20 million people in 92 regions world-wide. (See Leech et al.) It found that mask-wearing by an entire population led to a median reduction in the R number of 25.8% and that the median reduction in R observed in each region in association with mask-wearing was 20.4%. This study establishes the effectiveness of mass mask-wearing and highlights that wearing data, not mandate data, is necessary to infer this effect.[2]
7. Some governments and officials (such as Anthony Fauci of NIAID, USA) chose initially to even prevent mask-wearing as far as the public was concerned for fear that the rush for masks on the part of the public would mean not enough left for front-line health workers. That the richest country in the world has found itself facing a shortage of masks is something of a paradox which, however, can be explained by two features of its political economy: just-in-time supply philosophy of management which maximises efficiency but at the expense of resilience and the policy of outsourcing the production of goods to other economies which could produce such items cheaper. As a result, China produces 80% of the world's masks.
8. In order to develop effective control measures, scientists must investigate the mode of transmission of SARS-CoV-2. Simplistically put, scientists know that respiratory pathogens use two routes, the airborne route and the droplet route, but they did not initially know enough about the relevant variables which governed the actual path taken by a new pathogen such as SARS-CoV-2. Droplets are larger particles than aerosols; in the droplet-borne route, the disease is transmitted by large droplets (> 100 μm) or medium droplets (between 5 and 100 μm) which fall to the ground or land on other surfaces soon after release because of gravity – this is also called the fomite route (hence hand-washing, cleaning surfaces such as counters, supermarket trolleys, using hand sanitisers are said to be relevant measures to obstruct this route of transmission). Should the virus predominantly take the airborne route, the disease is transmitted by aerosols and small droplets (< 5 μm) which can be short-distance or longer-range. However, the scientific consensus up to the end of May 2020 as seen in this overview (Hooper 2020, published by the Massachusetts General Hospital) is that "there is strong evidence from the SARS epidemic… and the current COVID-19 pandemic … to suggest that this virus is predominantly transmitted via the droplet and contact routes. There is no evidence that SARS-CoV-2 is an obligate or a preferential aerosol-transmitted airborne disease in the community…" However, the scientific community, at any one moment in time, is necessarily ignorant about all the relevant aspects of the nature of the new coronavirus and its mode of operation. This very important point will be raised again later.

Different types of masks

There are masks and masks but the broadest two main types will first be distinguished:

1. Those worn by front-line health workers who have the closest contact with people with very serious or serious infection of COVID-19 well as people who are fragile health-wise and may fall prey to the coronavirus with more, not less serious consequences.
2. Those worn by the rest of the general public who may be asymptomatic or pre-symptomatic but who are, nevertheless, capable of infecting others with COVID-19.

The former category (worn in the main by professionals) are respirator masks called FFP ("filtering face pieces"). What do they filter? They filter or keep out salt and oil particles – hence they can be of a variety of sizes and fittings, ranging from FFP1 which can keep out 80%, FFP2 94% and FFP3 99% of such particles. Such high efficiency in filtering brings in its wake a problem – the wearer of such a type of mask finds it difficult to breathe while wearing it. Hence, a valve may be designed in its construction which then suffers from the drawback of allowing some unfiltered out-going air from the wearer to escape, which may go on to infect some other person in the vicinity of the wearer. Whatever the anomalies, this is the only type appropriate for use in a clinical setting. They do the job of protecting the wearing of the mask from being infected by those people who are already infected with COVID-19 (that is, the patients) whom the clinical staff have to treat. So ironically there arises a situation where the person wearing such a type of mask may turn out to be an agent in infecting others – for this reason, the

[2] An earlier publication (De *et al*. 24/04/2020), through its modelling, has argued that near universal masking (80%-90% of the population even with mask efficiency around 70%), in good time (by Day 50 of a pandemic), would have a clear effect in infection mitigation. It is not till early September 2021 that the results of an actual large RCT have become available – for details see footnote 3.

California Bay Area has banned the wearing of such masks with valves in public. However, in the clinical situation, to prevent such a bizarre consequence from happening, staff who wear PPFs also wear a shield – such a combination serves to protect the health worker as well as the patient.

In principle one could argue that in epidemiological terms, it makes sense for everyone, whether clinical or ordinary member of the public to wear PPFs. In practice, this policy has several drawbacks: respirator masks plus shield would be cumbersome for everyone to use, the combination would be costly, and worst of all, demand may exceed supply when the greatest fear would arise, namely, that front-line health workers would be left bereft of the equipment.

As epidemiological strategy, the public in general are either mandated or strongly encouraged to wear not respirator masks but disposable masks (the material commonly used is polypropylene, with 20 or 25 grams per square metre in density) which are generally flat and pleated with a built-in nose wire and simple elastic straps that go around the ears. Or they are cloth masks, with more than one layer of fabric. The primary function of such masks is simply to prevent the exhaled breath of the wearer from reaching other people – as people can be asymptomatic or pre-symptomatic, wearing such a mask would trap the droplets and aerosols which may contain the coronavirus from travelling further afield. This is called "source control". Research has shown that the average human cough fills roughly three quarters of a two-litre soda bottle with air which shoots out of the lungs in a jet. Also, each cough releases as many as 3000 droplets of saliva at speeds of up to 50 miles per hour. The sneeze starts from the back of the throat and exudes even more droplets, as many as 40,000 some of which gush out at speeds greater than 200 miles per hour. These droplets are so tiny, less than 100 microns across, that we cannot see them with our naked eye. The larger droplets fall to the ground quite quickly because of the force of gravity. The smaller and lighter ones (five microns or less) are not affected by gravity and can stay afloat for a good long while if not almost indefinitely in a room with little or no adequate air flow. Once airborne, viruses in the tiny droplets can survive for hours.

In summary, one could say that respirator (PPF) masks used in clinical settings primarily protect the wearers from infection while the masks worn by the public serve primarily to prevent spreading the wearers' own germs to others rather than to protect them from being infected by those around them. However, studies have also shown that such masks (from this point on, they will be referred to as ordinary masks) worn by the public do provide a degree of protection to the wearers of the mask (the mask absorption rate). The Mayo Clinic Staff, 2021 writes: "A cloth mask is intended to trap respiratory droplets that are released when the wearer talks, coughs or sneezes. **It also acts as a barrier to protect the wearer from inhaling droplets released by others**. The most effective cloth masks are made of multiple layers of tightly woven fabric like cotton. A mask with layers will stop more droplets from getting through your mask or escaping from it." Lisa Maragakis, 2021 (John Hopkins Medicine) writes: "If you are infected with the coronavirus and do not know it, a mask is very good at keeping your respiratory droplets and particles from infecting others. If you haven't yet received your COVID-19 vaccine, **wearing a mask can also help prevent germs that come from another person's respiratory droplets from getting into your nose and mouth.**" The CDC, USA on 7 May 2021 writes:

> SARS-CoV-2 infection is transmitted predominately by inhalation of respiratory droplets generated when people cough, sneeze, sing, talk, or breathe. CDC recommends community use of masks, specifically non-valved multi-layer cloth masks, to prevent transmission of SARS-CoV-2. Masks are primarily intended to reduce the emission of virus-laden droplets ("source control"), which is especially relevant for asymptomatic or presymptomatic infected wearers who feel well and may be unaware of their infectiousness to others, and who are estimated to account for more than 50% of transmissions. Masks also help reduce inhalation of these droplets by the wearer ("filtration for wearer protection"). The community benefit of masking for SARS-CoV-2 control is due to the combination of these effects; individual prevention benefit increases with increasing numbers of people using masks consistently and correctly.[3]

[3] See Chow 1 September 2021 about a major RCT recently completed in Bangladesh involving more than 340,000 people across 600 villages to investigate what effect mask wearing may have on COVID-19 infection. The study reports "an 11.9 percent decrease in symptomatic Covid symptoms and a 9.3 percent reduction in symptomatic seroprevalence, which indicates that the virus was detected in blood tests." One of the researchers of the project is also reported as having said: "A 30-percent increase in mask-wearing led to a 10 percent drop in Covid, so imagine if there was a 100-percenti increase – if everybody wore a mask and we saw a 100-percent change." However, this kind of large-scale RCT is not often practical and therefore, readily achievable; furthermore, it takes time to complete, and time is a scarce commodity in epidemiological terms when an infectious disease is growing exponentially – see Greenhaigh 2021.

Different cultures perceive mask-wearing in different moral, cultural light[4]

First, let's get a red herring out of the way. Whether mask-wearing is mandatory or not is not germane to the discussion in this section. Second, for the purpose in hand, let us put things simplistically, using the USA, on the one hand, to stand for the extreme end of a spectrum and East Asian countries (such as those countries referred to in the Introduction) to stand at the other end. The USA is made to represent the Western moral-social-cultural paradigm and East Asian countries are made to represent, in contrast, an expression of the non-Western moral-social-cultural paradigm. At least two things must be borne in mind with regard to this heuristic cum analytical schema.

It is not about the actual statistics of mask-wearing in these countries or the declaration of intent to wear one on the part of those polled in these countries. For instance, according to the BBC 20/07/2020, Americans had generally accepted mask-wearing more readily than people in the UK – nearly 60% in the US said they would always wear a mask when they went outside compared to less than 20% in the UK. Figure 1 below makes the same point. In other words, what is explored in some detail is how different cultures perceive the epidemiological measure of mask-wearing in general, and in particular, how different cultures either justify it or justify rejecting it.

We know that in the USA, in spite of a higher declared intention to wear masks amongst the population, mask-wearing resistance was not insignificant, manifested noisily not only in terms of actual protests and demonstrations but also in the language resisters used, a language which embodies and manifests their ideological world-view, declaring that the epidemiological measure constituted a violation of their Constitutional rights.[5] In contrast, the UK protesters were more muted both in the numbers who turned up to protest (in what should have been a high-profile, media-attracting demonstration in London when masks were made mandatory, only about a mere 100 or so gathered in Hyde Park; furthermore, they did not cite the Magna Carta or similar highfalutin political rhetoric – see Sky News UK 20/07/2020. They simply said that the legislation would infringe civil liberties and that it was not supported by the Science, so to speak. They maintained that there was no scientific consensus about the benefits of wearing masks, that WHO had changed their minds several times, and so had the CDC/USA. Their message was "spread love not fear".[6]

[4] It is important to point out that the issue of mask-wearing should not be discussed in a context-free manner. For instance, wearing masks in a heavily air polluted environment is very different from wearing them during an epidemic/pandemic. In the former context, the wearers are simply protecting The Self from harm without any possibility of preventing similar harm to Others; in the latter context, the wearers are primarily protecting Others although mask wearing may to some extent also benefit The Self. From the moral standpoint, the two contexts are very different.

[5] In Minnesota, 36 parent groups representing more than 30,0000 families wrote to the State Governor Tim Walz as well as President Joe Biden saying they "have watched the last week unfold in abject horror," referring to schools calling for mandatory mask-wearing. They used strong language: "We are here to inform you that your uninvited reign of destruction over the children of Minnesota is finished". The children "are ours, and they, too, are Americans with rights". Other groups in Minnesota also signed the open letter – see Alpha News 17/08/2021.

[6] What they said was true then. However, there is a need to bear in mind at least one important thing about how Science and scientists work – the scientific procedure is a dynamic one. In some areas, the rate of change in the understanding and perception of a phenomenon is so fast that a few weeks or months might make a lot of difference, especially in a domain where little is known before-hand, such as when a new coronavirus like SARS-CoV-2 gets a hold in a community/society/country. Today, just over 19 months since the emergence of COVID-19 in December 2019 in the world, it is well that we now see articles such as that written by a certain Dr Axon in the UK (who had given advice to SAGE and NERVTAG on ventilation, but is not currently a SAGE adviser) who claims that standard face coverings are just "comfort blankets" that do little to curb Covid spread – see The Telegraph 17/07/2021. But this is done with the benefit of hindsight, when scientists now understand more than they did at the start of the pandemic, that the virus transmits also as aerosols, not simply large or largish droplets. As a physicist and engineer, Dr Axon is correct in pointing out that ordinary masks cannot do the job of filtering out aerosols from the wearer's breath, as "Covid viral particle is around 100 nanometres, material gaps in blue surgical masks are up to 1,000 time that size, cloth mask gaps are 5,000 times the size." He is right, too, that proper ventilation in enclosed spaces is an effective way of preventing the spread of the virus. However, he does admit that "(m)asks can catch droplet and sputum from a cough but what is important is that SARS-CoV-2 is predominantly distributed by tiny aerosols". That he could write on the date he did and that he did not write the article 18 months or so ago, testify to the fact that like everyone else, he is benefitting from the wisdom of hindsight and from the research of the entire scientific community. Science is a collective effort, involving researchers and practitioners in all relevant domains of knowledge such as physics, chemistry, biology, medicine, sociology, anthropology, psychology, technology especially in big data computer technology, engineering, not to mention even philosophy.

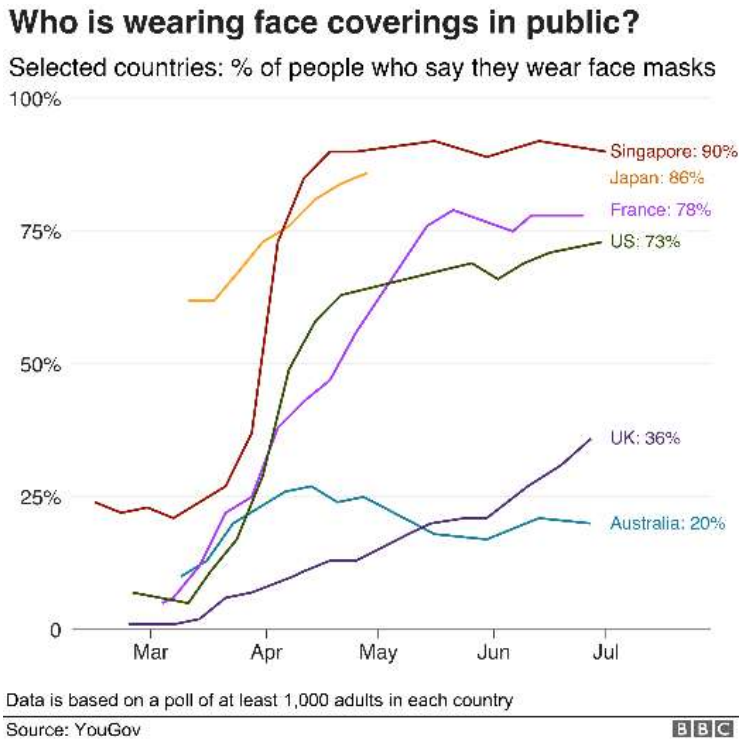

Figure 1

On yet another obvious level, among the resisters in the USA there appeared to be more supporters and voters of the Republican Party than the Democratic Party – a Gallup poll found that nearly 100% of Democrats polled wore a mask when going out compared to 70% of Republicans, a gap which had increased since the last poll three months earlier (see *The Washington Examiner*, 23/03/2020). This is unsurprising. Trump, as President of the USA at the time when the pandemic hit his country, had dismissed the threat posed by the virus, claiming that everything was under control even as cases continued to increase, then blamed the media and the Democrats in these words on 9/03/2020:

> The Fake New Media and their partner, the Democrat Party, is doing everything within its semi-considerable power (it used to be greater!) to inflame the CoronaVirus (sic) situation far beyond what the facts would warrant. Surgeon General, "The risk is low to the average American."

However, on 13/03/2020, he declared a national emergency, insisting that he had not shifted his position and that "I've always known this is a real, this is a pandemic. (sic) I've felt it was a pandemic long before it was called a pandemic." Yet, on 29/05/2021, he withdrew the USA from the WHO on the grounds that China had "pressured the World Health Organization to mislead the world when the virus was first discovered by Chinese authorities." However, by late July, his tone moved up another sombre gear, this time to get the nation to wear masks, although he had downplayed mask-wearing up to then; indeed, he had mocked Biden earlier for wearing one. For the first time in public, at least, he wore a mask on 12/07/2020 against a background of rising cases of infection (66, 528 infections over 24 hours) and death (a total of almost 135,000 deaths since the pandemic had taken off). On 02/10/2020, Trump and his wife tested positive for the virus. That same night he was transferred by helicopter to the Walter Reed Medical Center. On 05/10/2020, he discharged himself from hospital to continue his presidential campaign trail, against all known COVID-19 protocols. And so, he continued in such a vein even after he lost the election (early November 2020) to Biden. (See BBC 12/07/2020, *Politifact* 19/01/2021.)

Perhaps it would be more correct to call the USA phenomenon the Trump Phenomenon. The Trump Phenomenon may be analysed in terms of the following inter-related elements:

1. Underlying it is the minimal view of the state, associated with von Hayek's *The Road to Serfdom*, 1944 which argued that an appropriate system of government should leave individuals to pursue what they perceive to be their self-interest with the minimum direction from above, as that is the best system for managing uncertainty and change. The market, for instance, exemplifies best this kind of arrangement at work – vendors sell what they want to sell and at the price determined by what buyers are willing to pay. Both buyers and sellers get mutual satisfaction though each is acting entirely from the standpoint of self-interest – a spontaneous order

appears even though no obvious hand is directing it. One could see Hayek as a successor to Adam Smith's hidden hand of the market.

However, some theorists consider Hayek was, at best, a moderate libertarian and argue that the true founder of the minimal state is Robert Nozick (*Anarchy, State, and Utopia, 1*974). His minimal state possesses two main attributes or performs two functions: monopoly or near monopoly of force in the territory which provides protective or security services for everyone within the territory. When a state goes beyond these two tasks, then rights will be violated.

A caveat is entered at this point of the presentation. As it is not germane to the theme under exploration here, it is irrelevant to pursue further in detail about the complicated ideas and the relationship if any between those of Hayek and Nozick. Suffice it to say that although the majority of the mask-wearing resisters of this pandemic in the USA might never have heard or come across the writings of Nozick and Hayek, their world-view could be said to have entered their blood stream, and therefore informed their thinking and their conduct.[7] They did say that mandatory mask-wearing constitutes a violation of their liberties which include the right to make choices about one's health and bodily integrity, that the individual can choose to allow her/himself to be infected by the Coronavirus spewed out by others should s/he so wish, just as one may drink as much alcohol as one wants, that any interference from the state with one's choice is, therefore, unjustified and is a manifestation of a nanny- or paternalistic state. Furthermore, they would regard mandatory mask-wearing as violation of the First Amendment right to assembly and association.[8] Vice President Mike Pence said: "I want to remind you again freedom of speech and the right to peaceably assemble is in the Constitution of the U.S. Even in a health crisis, the American people don't forfeit our constitutional rights." (Pence has been shown to be wrong: the First Amendment is not absolute, though ensured by the Constitution. The US Supreme Court has long recognised that protecting public health is a legitimate end which can override measures that might otherwise violate the First Amendment or other provisions in the Bill of Rights – see *Chicago Tribune* 23/07/2020. A case brought to court in Minnesota on such grounds was rejected by the judge who considered the argument "meritless"; other resisters used "My body, My Choice", re-cycled from feminist campaigners against those who wish to ban abortion especially on religious ground – see *Newsweek* 24/08/2020.)

2. The minimal view of the state is associated with Individualism as an ideological world-view. The USA in general is perceived to embody the spirit of Individualism and in that sense to be the leading nation in the world in a list of individualist nations and cultures. Others perceived to belong to that tradition but with decreasing stridency are Australia, UK, Netherlands, New Zealand.[9] The term and concept of Individualism is somewhat slippery and one must define it for the purpose of the discussion in hand. It is used in the following senses:

   (a) The term is not used here in opposition to what is normally called Collectivism;[10] instead, a spectrum is invoked with High Individualism at one end and Low Individualism at the other. To reframe: one could say that the USA stands at the high end of Individualism with Trump USA at the highest end of the scale.

   (b) Ontologically, High Individualism focuses on the individual as a self-contained entity or as a free-floating social atom, and considers society to be no more than a mere collection of such social atoms with no cohesive or adhesive bonds between them (apart possibly from the immediate family of the individual) and so can without remainder be reduced to the sum of these social atoms.

   (c) At first sight, it appears to have affinity with Classical Liberalism via John Stuart Mill's distinction between Self-regarding and Other-regarding acts; however, the affinity disappears upon closer inspection. Mill was content to say that as the category of Self-regarding acts covered those which harmed only the individual though it may annoy or irritate others, the individual should be left well alone to perform them.

---

[7] Philosophers, following Merleau-Ponty, have called this process of the cultural absorption of philosophical world-views *sédimentation*; see Baggini 2018, xiii-xiv: "Most people do not consciously articulate the philosophical assumptions they have absorbed and are often not even aware that they have any, but assumptions about the nature of self, ethics, sources of knowledge, the goals of life, are deeply embedded in our cultures and frame our thinking without our being aware of them."

[8] Unlike the concept of the minimal state which forms part of the US *sédimentation,* the USA Constitution is always at the forefront of American consciousness.

[9] See https://clearlycultural.com/geert-hofstede-cultural-dimensions/individualism/. Retrieved 18/08/2021. Although Canada does not appear as a separate entry, it is generally assumed that it stands shoulder-to-shoulder with the USA along this spectrum.

[10] The term "Collectivism" is best avoided as it is often associated with terms such as "totalitarianism", "authoritarianism"; such terms imply concepts which not only leave no room for moral agency on the part of individual persons but also that they are only capable of having orders imposed upon them from above. The approach of this exploration, therefore, avoids the normal distinction between Individualism and Collectivism. Instead, it postulates High Individualism at one end of the Individualism spectrum and Low Individualism at the other end. However, Hofstede (end of 1970s) retained the Individualism-Collectivism distinction in his model of national cultures.

High Individualism appears in certain contexts such as mask-wearing to go beyond Mill by appearing to ignore the second category of the Other-regarding acts which individuals, according to Mill, are not permitted to do since they cause harm to others. While Mill recognised duties to Others, High Individualists elide the distinction. For them, it looks as if individuals have the right to do whatever they want or desire to do *carte blanche*, irrespective of damaging consequences their actions may cause to Others. Such libertarians are, therefore, not liberals in the Classical understanding of Liberalism. The preferred language of High Individualism is that of rights, human rights, fundamental rights, constitutional rights, interpreted in absolutist terms, eschewing the language of duties and responsibilities to Others.

(d) When disagreements and conflicts emerge between individuals, High Individualism resorts either to the use of military might (not perhaps so much in the domestic but not infrequently in the geopolitical context); in the domestic context, it typically resorts to litigation, law suits and the courts to settle disputes.

3. In contrast, nations and cultures towards the Low Individualism end of the spectrum recognise that apart from the rights of individuals, there are also responsibilities and duties to Others. (The People's Republic of China may be considered to be representative of the Low Individualism end of the spectrum with Singapore, Thailand, South Korea, Taiwan and Hong Kong closely following behind.)

(a) In other words, people implicitly "buy into" the view that there are moral, social, cultural bonds between individuals which make society possible as a structured, coherent whole. In the evolutionary history of humankind, initially the meaningful unit of society was the family and the tribe, then groups of tribes or clans in a specific region, next the merging of these to become a larger whole with an overall jurisprudential authority in charge which one call the state, and finally in recent modern times, they even see themselves as a nation-state.

(b) Low Individualism also tends to emphasise harmony as a key value as, in its absence, society could well fracture and disintegrate. As a moral/social/political/cultural concept, harmony crucially recognises that while disagreements and conflicts between individuals/groups will always exist, nevertheless, they have to be peacefully resolved if society, the whole, is to continue to exist and to flourish.

(c) They imply adherence, paradoxically, to Mill's two categories of duties although it is correct to observe that their category of the Other-regarding acts may be larger in terms of membership of such acts than in their category of the Self-regarding acts. However, they are not the mirror image of Libertarianism under High Individualism, as they do not elide the distinction; only they tend to endorse more acts coming under the Other-regarding category than they do under the Self-regarding category.

(d) It follows that from the characteristics outlined above, Low Individualism is not compatible with the philosophy of the minimal state. To put the matter a little differently, one could say that while High Individualism regards government or state intervention necessarily to be evil and to be resisted as much as it is possible or even at all cost, Low Individualism regards government or state intervention to be both necessary and, therefore, virtuous in principle.[11]

[11] The operative word, here, is "in principle". It is important to point out straightaway that Low Individualism as political philosophy is not committed to endorsing any and every state intervention/government as virtuous, as there are also other values in their philosophical framework to distinguish between good governance and bad governance. If China is taken to stand at the extreme Low Individualism end of the spectrum, one could cite the edicts of bad kings and emperors in its past as exemplars of bad governance. Edicts which decreed that the peasants be "conscripts" in the battles and the wars they fought against other rulers and states to augment their own territories and their power in order to achieve hegemonic status, that the peasants be taxed so highly that they and their families could barely survive without getting into debt. Such bad rulers also neglected to maintain existing infrastructures such as rivers and canals for the purpose of efficient irrigation and transportation, to undertake new ones as society developed, who encouraged or failed to stamp out corruption and so forth. Good governance would consist of edicts which permitted the peasants to cultivate their land in peace and quiet, which did not burden them with crippling taxes, but which helped them to improve their yield of extant crops, to grow new ones and which ultimately meant they lived without corrupt officials, rapacious landlords and so forth. In other words, a good emperor or king was defined in a nutshell as someone who had the welfare of the common people at the heart of their policies. The d*ao*/path of good governance consisted of promoting the well-being and happiness of the people which was understood to refer fundamentally to their desire for security, in the largest sense of the term – no wars ravaging the land, no armies trampling over cultivated fields, no bearing of arms for kings and landlords, no drought, no floods, no famine, no plagues, no political and social disorder. This list might consist of happiness only negatively conceived (what is sometimes called negative utilitarianism) but if attained would empirically be equivalent to Bentham's principle of the greatest happiness of the greatest number.

In general, to conclude this section, one could explain why (a) mask-wearing resistance would occur in the most strident form in the USA as it occupies the extreme end of the spectrum as High Individualism; (b) typically, the resistance would be conducted in a language which invokes freedom and autonomy of the individual; (c) mandatory mask-wearing is seen as a violation of the right of the individual, which right precludes incursion into the personal, sacrosanct space of individuals, of preserving their own health and bodily integrity as they see fit, the outcome entirely of their own decision-making, irrespective fundamentally of causing harm to Others or indeed even harm to themselves; (d) typically resisters claimed that it is, above all, a violation of their Constitutional rights under the First Amendment, the most sacred of all rights under their understanding of freedom and democracy. Overall, their ideological world-view is consonant with the Nozickian view of the minimal state and of Libertarianism; however, it is not consonant with Classical Liberalism.

In contrast, countries and cultures towards the Low Individualism end of the spectrum tend to accept mandatory mask-wearing as an edict of the state which is in keeping with their understanding of good governance as well as with their recognition that morally compelling reasons dictate restraint be placed on conduct of The Self in order to promote over-whelming benefits to Others. Their moral framework accommodates both Duties to Self and Duties to Others, and furthermore recognises that given the kind of world we humans live in, there may be more issues and matters falling into the latter category than High Individualism would care to admit, even amongst those who may acknowledge the legitimacy of this category in the first instance.

Exploring further the relation between Self and Others

This section will examine this theme under two aspects:

1. Empirically and conceptually the notion of the Self is meaningless without reference to Others
2. These links together with other features already explored in the section above would mean that even if mask-wearing only prevents harms to Others with no accompanying possibility of preventing harm to Self, people in Low Individualism societies/cultures would accept/conform to mask-wearing readily on moral and cultural grounds whereas it would be argued that if mask-wearing exclusively benefits only Others but not the mask-wearer, such persons in High Individualism cultures and countries would not consider it morally compelling to wear masks and to resist/reject wearing them.

High Individualism implies that it makes sense to conceptualise the Self but to ignore the concept of Others, This, to Low Individualism is philosophically unintelligible. In the largest understanding of language and the reality which language points to beyond itself, the world cannot contain simply the individual as the Self in the absence of Others. Minimally, it consists of one Other – human reproduction (which is sexual reproduction) involves two people, the Self and one Other. Although it is the female Self which carries the child to term, the female Self cannot be pregnant without the Male Other. The result of such a pregnancy is yet another Other. In other words, for humankind to maintain itself as a species over time, the species must reproduce itself, and this involves minimally four individuals or to put the matter somewhat differently, the Self and three Others.[12] This then is the logic and arithmetic of human sexual reproduction.

Furthermore, a human infant, unlike other mammalian infants requires intensive nurturing and concentrated use of parental-societal resources for healthy growth and development leading to maturity. For a start, humans, given their type of consciousness, have a language which is capable of extreme abstraction; it is this in-built capability for abstraction which enables humans to theorise/hypothesise in domains as far apart as theology, philosophy, science as well as in everyday life. The human infant – The Self in this context of learning – has to be taught language by many Others (which include immediate parents, older siblings, other relatives, neighbours, and more formally teachers in schools).

Conceptually, our human language is learnt, understood and transmitted in a manner which involves polar contrasts. Think of terms such as “this”, “here”, “up”, “now”, “hot”, “light”, “day” and so forth. On every occasion of their use, we imply that each term has its own polar contrast within the context it is invoked.

[12] The reasoning is quite obvious. If reproduction requires two individuals but if any two individuals are not having two children, but say only one, then the couple is not reproducing itself. Take this example from the class of 1927 Harvard graduates. This highly educated class according to one set of statistics was committing suicide. The Population Reference Bureau in 1952 showed that the average alumnus of the Class of ’27 produced only 1.85 children since graduation – this figure was based on more than 10,000 reports from members of this Class throughout America. The Bureau estimated that 2.1 children were needed for replacement. If the findings of this sample report turned out to be reliable, then extrapolation would show that the 103, 000 individuals who graduated from Harvard that year would bequeath only 79,000 children. If this figure in turn turned out to be correct, then the male graduates of 1927 would have failed to reproduce themselves by 12 per cent – see *The Harvard Crimson* 1952. And if this 12 per cent reduction were to persist, then this would ultimately lead to the extinction of the Class of ’27.

Term	Polar Contrast	Term	Polar Contrast
this	that	day	night
here	there	woman	man
up	down	plant	animal
now	then	grief	joy
hot	cold	birth	death
light	dark	Hell	Heaven

It follows that the term "Self" has as its polar contrast the term "Other". If our language necessarily embodies the two terms, then it also follows that the two terms stand for two different though related concepts. The individual person, The Self, in daily existence must know how to negotiate its relationship with Others, whether these be one's parents, one's children, one's neighbours, one's friends, the local shop keeper, the local police officer on the beat and so forth. The range of Others extends to include one's compatriots, people living in neighbouring countries, ultimately to people everywhere in all parts of the world. As the range of relationships with Others extend outwards, The Self must learn to relate to these Others politically and morally.

High Individualism and Low Individualism understand these relationships with Others differently from these two vantage points. For High Individualism, its moral boundaries are very tightly drawn as it wants as much as possible to exclude The Other/Others. Low Individualism draws such boundaries in a more expansive manner, to include as many Others as it is practical to do. In the context of mask-wearing, the differences in a nut-shell pan out as shown in Table 1 shown below.

There is yet another different way of making the same point, a way indicated by Ingold 2016.[13] If one had not misunderstood Ingold, a key theme of his extended nuanced exposition seems to be that we, human beings, are par excellence "'an animal which responds' … As responsive beings, the responsibility of care is something that *falls* to us. The actions we carry out in its fulfilment are therefore in the nature of tasks. A task is an action that we owe rather than own: it belongs to others rather than ourselves…". Altering Ingold's language slightly, one could say that Low Individualism embodies and manifests responsivity and responsibility, a moral vantage point which is alien to High Individualism, as it ignores or denies the basic premise that humans are "an animal which responds" and which, therefore, makes the human animal a responsible being.

Conclusion

If the arguments advanced in this exploration are empirically plausible and coherently presented, they would have established the following theses:

1. Epidemiology in general and mask-wearing as a public health, non-pharmaceutical measure in particular are best understood within a moral-cultural framework which recognises John Stuart Mill's distinction between Self-regarding and Other-regarding Acts.
2. Low Individualism cultural frameworks are consonant with above, while High Individualism frameworks with their moral boundaries being tightly drawn around the self-interested individual is not consonant with either Classical Liberalism or Epidemiological theorising and thinking.
3. Epidemiological Theorising/Thinking characteristically and necessarily situates The Self in relation to The Other/Others in a reciprocal manner such that what benefits/damages Others would benefit/damage The Self and what benefits/damages The Self would benefit/damage Others.

   One needs here to recognise that Epidemiological Reasoning distinguishes between two different contexts in which benefits or damage can occur in a reciprocal manner:

   (a) Wearing a mask on the part of the wearer (The Self) benefits people around as the mask traps droplets emitted from The Self's breath, coughs and sneezes, preventing them from escaping when they could be carrying the Coronavirus, SARS-CoV-2; at the same time, wearing the mask could prevent the mask-wearer (The Self) from being infected by the disease-bearing droplets, big and small, emitted by Others around The Self.

   (b) Even if it turns out that no evidence exists which shows that the mask worn by The Self/the mask-wearer protects against droplets containing SARS-CoV-2 emitted by Others around The Self, Epidemiological Reasoning demonstrates that if mask-wearing in a population is near universal (say around 80%), this means that there is less of the pathogen lying about to cause mischief and damage. In other words, The Self would still enjoy a much better level of protection from harm when mask-wearing is near universal in the community than when it is not. In this epidemiologically extended manner, wearing the mask to protect Others from harm can and do indeed protect The Self from harm.

[13] With thanks to Charles Ing for drawing attention to it.

(c) There are various models in Epidemiology, called compartmental models for disease transmission in contagious epidemics. A classic contribution, much cited, is that of Kermack and McKendrick 1927 which postulated three compartments, the **S**(usceptible) **I** (nfected) **R**(ecovered/emoved through death), the SIR Model. All models make assumptions. This one assumes that initially all members of the community are equally susceptible to the pathogen and that a single infection bestows complete immunity. They performed a mathematical investigation of such a model.[14] Another model called the SEIR Model has four compartments, the additional is **E**(xposed).

4. Below is Table setting out the differences between High Individualism and Low Individualism.

[14] The literature on the mathematical details is extensive and readily available; it is not relevant for the purpose in hand to look into it.

High Individualism	Low Individualism
Appears to entail a hierarchy of positions, arranged in a descending order below: Should masks protect only The Self, reject mask-wearing as The Self, given Autonomy and Freedom, may choose to do whatever it wants to do, including the freedom and therefore the right to be infected. Freedom and Autonomy are prioritised over harm to The Self. Call this the Masochistic Version of High Individualism.	Should masks only protect Others but do not protect The Self from infection, then The Self would still mask, as a fundamental value of Low Individualism is to avoid causing harm to Others through the action of The Self.
If masks only protect Others but do not protect The Self from infection, reject mask-wearing. Call this the Self-interested Version. If, however, mask-wearing does to an extent also protect The Self while over-whelmingly protect Others from infection, then The Self could/might entertain mask-wearing. This implication follows from the premise of The Self as a self-interested individual who seeks to prevent harm to itself – The Self would only act if the interests of itself are involved, but not otherwise.	The commitment to mask-wearing to prevent Others from infection is reinforced by the fact that the action of mask-wearing involves only a limited degree of inconvenience to the wearer. On the cost-benefit sheet of Low Individualism, the cost to the mask-wearer in terms of limited inconvenience/discomfort is undisputedly out-weighed by the amount of benefit which flows to Others through mask-wearing. Low Individualism needs only pose this simple question to The Self: does The Self have a moral duty to wear a mask if mask-wearing on the part of The Self would contribute to preventing Others from infection? The answer to this question is an unequivocal "Yes". So, such a Self would wear a mask. In a society where Low Individualism prevails predominantly, such a society would achieve the desirable goal of a tolerable low level of infection even if this moral strategy cannot secure a nil rate of infection.
Empirical evidence regarding mask-wearing to protect The Self from infection does seem to an extent to exist – if this is correct, then mask-wearing resisters ought to revise their stance. Whether they would do so depends on how highly they price the value of preventing harm to The Self. An extreme masochistic version would not value it – in the name of Autonomy and Freedom, it may choose to reject mask-wearing.	And if epidemiological evidence shows that masks also to an extent protect the Self, then the low rate of infection in the community/society would be reinforced. Low Individualism recognises that by acting to bring about a common good – that is, to prevent or decrease the incidence of infection overall in the community/society – The Self in turn is able to enjoy the good of avoiding infection, as the smaller the number of infected people there is, the less is the chance of The Self catching the infection. In other words, Low Individualism is a win-win situation, not a zero-sum game. In benefitting Others, The Self also benefits itself. The paradox of Low Individualism: strictly speaking there is no need to make mask-wearing mandatory, although some countries with Low Individualism resort to the law (a) to take care of residual cases of recalcitrance and (b) to remind the people that not only is mask-wearing morally compelling but also legally compelling – see Cheng et al. 2020, Nakayachi et al. 2020.
High Individualism in either version is not consonant with Epi-demiological reasoning and understanding of SARS-CoV-2/COVID-19.	Low Individualism, with its built-in concepts of altruism and solidarity is consonant with Epidemiological reasoning and understanding of SARS-CoV-2/COVID-19.
High Individualism is not consonant with Classical Liberalism.	Low Individualisms is consonant with Classical Liberalism – another paradox.
High Individualism denies or ignores the premise that human beings are responsive and therefore, responsible beings.	Low Individualism rests ultimately on the premise that human beings are responsive and therefore, responsible beings.

Table: Differences between High Individualism and Low Individualism in respect of mask-wearing

References and Select Bibliography

Abrams, Nathan, Hayley Roberts. Simon Willcock et al. 06/08/2021. Will mask wearing still be common in Britain after the pandemic is over? *The Conversation*. URL = Will mask wearing still be common in Britain after the pandemic is over? (theconversation.com) . Retrieved 09/08/2021.

Al Jazeera 17/08/2020. Which countries have made wearing face masks compulsory? More than 50 countries require people to cover their faces when they leave home. URL = https://www. aljazeera.com/ news/2020/8/17/which-countries-have-made-wearing-face-masks-compulsory . Retrieved 08/08/2021.

Alpha News. 17/08/2021. 36 parent advocacy groups reject forced masking in letter to Walz. URL = 36 parent advocacy groups reject forced masking in letter to Walz - Alpha News (alphanewsmn.com) . Retrieved 17/08/2021.

Baggini, Julian. 2018. *How the World Thinks: A Global History of Philosophy*. London: Granta Books.

Bardi, Jason Socrates. 14/06/2009. *Live Science*. The Gross Science of a Cough and a Sneeze. URL = https://www.livescience.com/3686-gross-science-cough-sneeze.html . Retrieved 08/08/2021.

BBC. 12/07/2020. Coronavirus: Donald Trump wears face mask for the first time. URL = https://www.bbc.co.uk/news/world-us-canada-53378439 . Retrieved 12/08/2021.

—. 20/07/2020. Coronavirus: why are Americans so angry about masks. URL = https://www.bbc.co.uk/news/world-us-canada-53477121 . Retrieved 10/08/2021.

CDC, USA. 07.05/2021. Science Brief: Community Use of Cloth Masks. URL = https://www. cdc.gov/coronavirus/ 2019-ncov/science/science-briefs/masking-science-sars-cov2. html . Retrieved. 06/08/2021.

Chicago Tribune. 23/07/2020. Commentary: No, mask mandates are not unconstitutional. URL = https://www. chicagotribune.com/opinion/commentary/ct-opinion-coronavirus-mask-mandates-constitutional-20200723-53dpqip7lff55o5fp444mql6cm-story.html. Retrieved 12/08/2021.

CHECKYOURFACT. 02/05/2021. DID THE WHO SAY FACE MASKS NO LONGER NEED TO BE WORN? URL = https://checkyourfact.com/2021/02/05/fact-check-who-masks-no-longer-worn/ . Retrieved 08/08/2021.

Cheng, Kar Keung, Tai Hing Lam and Chi Chiu Leung. 14/04/2020. *The Lancet*. Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity. URL = Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity - The Lancet . Retrieved 07/08/2021l.

Chow, Denise. 01/09/2021. Largest study of masks yet details their importance in fighting Covid-19. NBCNEWS. (Preprint study posted online by Innovations for Poverty Action). URL = Largest study of masks yet details their importance in fighting Covid-19 (nbcnews.com) . Retrieved 02/09/2021.

CNN. 02/03/2020. The surgeon general wants Americans to stop buying face masks. URL = https://edition.cnn.com/2020/02/29/health/face-masks-coronavirus-surgeon-general-trnd/index.html . Retrieved 10/08/2021.

—. 27/07/2020. Not wearing a mask outside could mean a $645 fined in Hong Kong as city imposes strict Covid measures. URL = https://edition.cnn.com/2020/07/27/asia/hong-kong-masks-coronavirus-restrictions-intl-hnk/index.html#:~:text=Hong%20Kong%20%28CNN%29%20 Hong%20 Kong%20will%20 make%20 wearing,grapple%20with%20a%20rising%20surge%20in%20coronavirus%20infections. Retrieved 08/08/ 2021.

—.13/10/2020. South Korea mandates mask-wearing to fight Covid-19 as face coverings remain controversial in the US. URL = https://edition.cnn.com/2020/10/13/asia/south-korea-masks-coronavirus-intl-hnk/index.html . Retrieved 08/08/2021.

—. 08/01/2021. CNN. Taiwan's COVID-19 Enforcement Success Includes Quarantine Hotels, Musical Trash Trucks. URL = https://edition.cnn.com/2020/07/27/asia/hong-kong-masks-coronavirus-restrictions-intl-hnk/ index. html#:~:text=Hong%20Kong%20%28CNN%29%20Hong%20Kong% 20 will% 20 make%20 wearing, grapple%20with%20a%20rising%20surge%20in%20 coronavirus% 20 infections. Retrieved 08/08/2021.

De, Kai, Guy-Philippe Goldstein, Alexey Morgunov *et al*. 22/04/2020. Universal Masking is Urgent in the COVID-19 Pandemic: SEIR and Agent Based Models, Empirical Validation, Policy Recommendations. (arXiv2004.13553v1 [physics.soc-ph]. URL = https://arxiv.org/abs/2004.13553. Retrieved 22/08/2021.

—. 24/04/2020. Universal Masking to Restart Society and Save Lives: COVID-19 Data, Simulations, Policy Recommendations. URL = http:// dek.ai/ masks4all/universalmasking.pdf. Retrieved 18/08/2021.

Froda, Sorana and Fabrice Larribe. 09/08/2021. How effective are COVID-19 vaccines? Here's what the stats mean … and what they don't. *The Conversation.* URL = How effective are COazVID-19 vaccines? Here's what the stats mean … and what they don't (theconversation.com) . Retrieved 10/08/2021.

Full Fact. 14/07/2021. New study estimates mask wearing could cut R number by 25% not 0.25. URL = https: // fullfact.org/online/andy-burnham-mayor-manchester-masks-misquote/ . Retrieved: 08/08/2021.

Greenhaigh, Trish. 13/07/2021. COVID: seven reasons mask wearing in the west was unnecessarily delayed. *The Conversation*. COVID: seven reasons mask wearing in the west was unnecessarily delayed (the conversation.com). Retrieved 08/08/2021.

Hammond, Phil. 2021. *Dr Hammond's Covid Casebook*. UK: Private Eye.

Hofstede, Geert. End of the 1970s. The 6-D model of national culture. URL = https:// geerthofstede.com/culture-geert-hofstede-gert-jan-hofstede/6d-model-of-national-culture/ . Retrieved 02/06/2021.

Hooper, David. 31/05/2021. HOW IS SARS-COV-2 TRANSMITTED? Massachusetts General Hospital. URL = https://advances.massgeneral.org/research-and-innovation/article.aspx?id=1284. Retrieved 09/08/2021.

Howard, Jeremy, Austin Huang, Zhiyuan Li, et al. 26/01/2021. An evidence review of face masks against COVID-19. Proceedings of the National Academy of Sciences of the United States of America. URL = https:// www.pnas.org/content/118/4/e2014564118. Retrieved 18/09/2021.

Ingold, Tim. First published, 2016. On human correspondence. *Journal of the Royal Anthropological Institute*. Volume 23, Issue 1, 2017. URL = On human correspondence - Ingold - 2017 - Journal of the Royal Anthropological Institute - Wiley Online Library . Retrieved 16/08/2021.

Kermack, W.O. and A.G. McKendrick. 1927. A Contribution to the Mathematical Theory of Epidemics. *Proceedings of The Royal Society*. URL = https://royalsocietypublishing.org /doi/pdf/ 10.1098/ rspa.1927.0118. Retrieved 18/08/2021.

Kostoe, Simon. 14/07/2020. Does your face mask protect you or other people? *The Conversation*. https://theconversation.com/does-your-face-mask-protect-you-or-other-people-142612. Retrieved 08/08/2021.

Leech, Gavin, Charlie Rogers-Smith, Jonas B. Sandbrink, et al. 18 June 2021. *Medical Reviewxiv*. Mass mask-wearing notably reduces COVID-19 transmission. URL = https://www.researchgate.net/ publication/ 352540034_Mass_mask-wearing_notably_reduces_COVID-19_transmission . Retrieved 04/09/2021.

Lewandowsky, Stephan and Klaus Obervauer. 09/08/2021. Many conservatives have a difficult relation with science – we wanted to find out why. *The Conversation.* URL = Many conservatives have a difficult relationship with science – we wanted to find out why (theconversation.com) . Retrieved 10/08/2021.

Maragakis, Lisa. 03/06/2021. Can wearing a face mask prevent coronavirus from spreading? Johns Hopkins Medicine. URL = https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/ coronavirus -face-masks-what-you-need-to-know. Retrieved: 06/08/2021.

Mayo Clinic Staff. 04/08/2021. How well do face masks protect against coronavirus? The Mayo Clinic. URL = https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/coronavirus-mask/art-20485449. Retrieved 06/08/2021.

Nakayachi, Kazuya, Taku Ozaki, Yukihide Shibata et al. 04/08/2020. Why do Japanese People Use Masks Against COVID-19, Even Though Masks are Unlikely to Offer Protection From Infection? *Frontiers in Psychology*. URL = Frontiers | Why Do Japanese People Use Masks Against COVID-19, Even Though Masks Are Unlikely to Offer Protection From Infection? | Psychology (frontiersin.org) . Retrieved 15/08/2021.

Newsweek. 24/08/2020. JOE BIDEN WANTS A MASK MANDATE. URL = https://www. newsweek.com/fact-check-mask-mandate-unconstitutional-1542465 . Retrieved 12/08/2021.

PolitiFact. 17/09/2020. CDC Director Robert Redfield says healthy people should NOT wear masks. URL = https://www.politifact.com/factchecks/2020/sep/18/instagram-posts/cdc-director-says-healthy-people-should-wear-masks/ . Retrieved. 08/08/2021.

—. 19/01/2021. Timeline: How Donald Trump responded to the coronavirus pandemic. URL = https://www.politifact.com/article/2020/mar/20/how-donald-trump-responded-coronavirus-pandemic/ . Retrieved 12/08/2021.

Reuters Fact Check. 04/09/2020. Fact check: Face masks being worn in China before COVID-19 doesn't prove they are ineffective, URL = https://www.reuters.com/article/uk-factcheck-china-mask-covid-idUSKBN25V1UR . Retrieved 08/08/2021.

Sky News UK. 20/07/2020. Coronavirus: Anti-mask activists protest against order to wear face coverings. URL = https://news.sky.com/story/coronavirus-anti-mask-activists-protest-against-order-to-wear-face-coverings-12032097 . Retrieved 11/08/2021.

The Guardian. 12/07/2021. From masks to self-isolation: which Covid rules will change in England on 19 July? URL = https://www.theguardian.com/world/2021/jul/12/from-masks-to-self-isolation-which-covid-rules-will-change-in-england-on-19-july . Retrieved 08/08/2021.

—. 13/07/2021. Masks to remain compulsory on London tube, buses and trains. URL = https://www. theguardian.com/uk-news/2021/jul/13/masks-will-be-needed-on-london-tube-buses-and-trains-tfl-to-confirm. Retrieved 08/08/2021.

The Harvard Crimson. 17/06/1952. Class of 1927 Fails to Reproduce Itself, National Statisticians Claim. URL = https://www.thecrimson.com/article/1952/6/17/class-of-1927-fails-to-reproduce/ . Retrieved 13/08/2021.

The New York Times (Daniel Victor et al.). 2 October 2020. In His Own Words, Trump on the Coronavirus and Masks. URL = https://www.nytimes.com/2020/10/02/us/politics/donald-trump-masks.html . Retrieved 11/08/2021.

The Telegraph. 17/07/2021. Cloth face masks are 'comfort blankets' that do little to curb Covid spread, Scientist warns. URL = https://www.telegraph.co.uk/news/2021/07/17/cloth-face-masks-comfort-blankets-do-little-curb-covid-spread/?WT.mc_id=tmgliveapp_iosshare_AxdbmR7tGYPz . Retrieved 12/08/2021.

Wang, Yuxin, Zicheng Deng and Donglu Shi. 5 January 2021. How effective is a mask in preventing COVID-19 infection? *Med. Devices Sens*. URL = https://www.ncbi.nlm.nih.gov/ pmc/articles/PMC7883189/ . Retrieved 02/09/2021.

Washington Examiner. 23/06/2020. 'Culture war': Gallup finds Democrats and Republicans parting ways on social distancing. URL = https://www.washingtonexaminer.com/news/culture-war-gallup-finds-democrats-and-republicans-parting-ways-on-social-distancing-and-masks. Retrieved 11/08/2021.

End

First edition: 30 September 2021

How to cite this piece in your bibliography:
Keekok Lee. 2021. First Edition. Epidemiological Thinking Through the Lens of Different Cultural Perspectives: Mask-wearing as a Case-study
URL = www.keekoklee.org.