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Conspiracy theories and pandemic management in Africa: critical reflections on contexts, contradictions and challenges

The coronavirus pandemic, though primarily a health issue, has had significant social, economic and political implications across the world. There are reasons to believe that some of the changes occurring are likely to be permanent even in a post-pandemic world, and there are even suggestions that the world may be entering a phase in which pandemics become recurrent. Making sense of all that the pandemic has brought has by no means been easy, even for scientists who have had to review and revise their claims as new discoveries about the virus are made. One of the fallouts of the pandemic has been a proliferation of conspiracy theories about the origin of the virus, as well as efforts to contain it. Summed up, these theories of various shades allege that certain powerful forces are behind the pandemic, in pursuit of some narrow ends that range from the political to the religious. In this paper, I analyse conspiracy theories and the motivations behind them. Situating conspiracy theories within the pandemic, I argue that they are best understood not within the framework of a single theory but by an understanding of how diverse

motivations generate different, even contradictory conspiratorial accounts. I argue that whereas conspiracy theories have become a feature of modern society, and have been amplified in the age of technology, they have low credibility value in explaining the pandemic, while having significant implications. I also argue that if left unchecked, conspiracy theories have the capacity to further undermine governments' capacity to respond to big crises in Africa in the future. I conclude that conspiracy theories are best managed in a pandemic through consistent, transparent engagement rooted in trust-building between the people and governments, especially in Africa.

Keywords: conspiracy theories, coronavirus, pandemic, Africa, alienation

Conspiracy theories: introduction and clarification

In the early hours of September 11, 2001, the world woke up to one of the greatest and deadliest terrorist attacks against the United States of America (Bergen 2020). Although government investigations and independent reviews have attributed the planning and execution of this attack to al-Qaeda, some have claimed that the attack is a result of a conspiracy or collaboration between important individuals within the US government and the al-Qaeda terrorist organisation and that the US government had foreknowledge of the attacks and deliberately ignored it (Meigs 2005). Speculations such as these – that is, the belief that there is a secret plan by a group to do something unlawful or harmful – are among various attempts by individuals trying to explain harmful or tragic events or circumstances that are beyond their control (Moore 2016). These beliefs, referred to as conspiracy theories, often arouse a sense of fear and scepticism towards the possibility of a hidden, secret, and dangerous plot of some organisations or people which influence the lives of people without the latter being aware of it.

The term “conspiracy theory” has generated a lot of controversy in public discussions because as Joseph Uscinski (2020: 22) opines, “few people want their ideas to be labelled ‘conspiracy theories’ and fewer want to be called ‘conspiracy theorists’”. Conspiracy theory is derived from the term “conspiracy”, which means a secret agreement between two or more people or groups to do something bad or illegal that will harm someone else. A conspiracy involves a small group of powerful individuals acting in secret for their own benefit and against the common good. It often suggests a large-scale attempt to inhibit the fundamental rights of people, alter bedrock institutions, and commit large-scale fraud mostly to the ignorance of those affected. An example of this is the

Tuskegee experiments conspiracy which involved claims of syphilis having been injected into unsuspecting African Americans (Uscinski 2020: 22-23).

A conspiracy theory, however, refers to the attempt to attribute harmful or tragic events to the actions of a powerful group of people. A conspiracy theory rejects the official or accepted explanation surrounding events and asserts the existence of a conspiracy even when there is a lack of evidence or affirmation. Jan-Willem van Prooijen (2018: 5) defines conspiracy theory as “the belief that a number of actors join together in secret agreement, in order to achieve a hidden goal which is perceived to be unlawful or malevolent”.

This suggests that conspiracy theories can take many forms and that people can hold conspiracy theories about different spheres such as governmental institutions, the health sector, the music industry, scientific research and even their personal lives. Uscinski (2020: 23) says that a conspiracy theory is “an explanation of past, present, or future events or circumstances that cites, as the primary cause, a conspiracy”. For him, conspiracy theories are accusatory ideas that could be either true or false, and they contradict the proclamations of epistemological authorities. An example of this, one already hinted at above, is the belief which holds that the US government deliberately ignored a forewarning concerning the 9/11 attacks. This explanation, however, contradicts the official explanation from the FBI and the CIA.

Central to the definitions above is the idea that conspiracy theories embody beliefs in the intention of some persons who possess a reasonable capacity to secretly do harm to the public. Building on this basic view, Van Prooijen (2018: 5-6) outlines five distinctive features of conspiracy theories which are: pattern (conspiracy theories try to explain events by establishing non-random connections between actions, objects, and people); agency (conspiracy theories hold that an event or circumstance was caused by an actor purposefully); coalitions (conspiracy theory involves a coalition or group of multiple actors), hostility (conspiracy theories often assume that the conspiracy or collaboration aims to pursue selfish goals that are not in the interest of the public); and, continued secrecy (conspiracy theories are about conspiracies that have not yet been exposed by hard evidence, and hence remain secret and uncertain).

Van Prooijen and Douglas (2017: 323-4) argue that conspiracy theories have long been in existence and their historical development can be said to originate from societal crisis situations, that is, when people experience uncertainty and fear as a result of societal crisis situations such as terrorist attacks, natural disasters, war, assassination, pandemic outbreaks or climate change, they tend to develop various narratives to understand or make sense of such events. The

attempts to understand or make sense of crisis or unpleasant events often lead to the development of conspiracy theories or beliefs (Pagan 2020:535).

It therefore seems clear that conspiracy theories have been around for a while, and are unlikely to go away soon. Since the coronavirus pandemic broke out, conspiracy theories have proliferated, and influenced public perception as well as governments' reactions across the world. If the current pandemic is to be curtailed, and future ones are to be well managed, then understanding the diverse motivations of conspiracy becomes imperative. In the following sections of this paper, I examine some theories of conspiracy theories such as the misattribution theory, conspiracy theory as pathology, and political alienation. Thereafter, I examine the nature of the coronavirus pandemic and the conspiracy theories that have been developed in relation to the coronavirus (COVID-19) pandemic. Next to that, I discuss some of the manifestations of COVID-19 conspiracy theories in Africa and I argue that although theorisations of conspiracy theories are insightful, no single theory on their own adequately explains the proliferation of conspiracy theories in relation to the pandemic. Rather, these theories, in addition to the rise of populism, increased access to social media and the outside effect of religion in much of Africa, have all combined to ensure the proliferation of conspiracy theories regarding the pandemic. This, I conclude, portends grave consequences for the management of not just COVID-19, but of future pandemics.

Theorising conspiracy theories

The term "conspiracy theory" was first popularised by Karl Popper who, through his misattribution theory, attempted a dismissal of conspiracy theories (Pauly 2020). Popper argues that the conspiracy theory of society is a version of theism which upholds that there are various powerful men, groups or sinister pressure groups responsible for deliberately planning some events or activities that may be harmful or evil to others. Conspiracy theorists, as Popper opines, often believe that unpleasant situations such as war, unemployment, poverty and diseases outbreaks are the result of direct design of some powerful individuals and groups; but conspiracy theories have very little truth in them simply because conspiracies never or hardly ever turn out in the way that is intended (Popper 1966: 301). Popper explains that although conspiracies happen, it is only a few that are ultimately successful (Popper, 1966: 301). The reason is that social life is action within a more or less resilient or brittle framework of institutions and traditions which create many unforeseen reactions in social frameworks and so it would be almost impossible for conspiracies to happen exactly the way they are intended to occur (Popper 1966: 301-302, Popper 1962: 123-25).

Popper implies that even if there were people or groups who intended to produce an effect or carry out an event, these events eventually do not happen because social life is generally unpredictable. For him, therefore, events happen as a result of the unwanted or unintended consequences of our actions not necessarily because there are people who deliberately scheme or plan for such events to happen. Popper's refutation of the conspiracy theory of society simply suggests the falsity of COVID-19 conspiracy theories because pandemics for instance, do not occur as intended or planned. In response, however, Charles Pidgen (1995: 4) argues that evidence from history reveals that there are indeed conspiracies and so to dismiss conspiracy theories as hogwash is to deny this existence of conspiracies. For him, it is sometimes appropriate to cite conspiracies in the explanation of historical events because the falsity of Popper's "conspiracy theory of society" does not imply that there are not a lot of conspiracies or that conspiracy theories do not play an important role in the explanation of events.

After Popper, the discourse on conspiracy theories began to arouse the interests of psychiatrists who made attempts to categorise conspiracy theories as products of pathology, delusion and paranoia (Byford 2011: 121). They explained that between reason and madness, there are a series of intermediary phenomena which form a distinct field and cover irrational or dysfunctional behaviours and, apparently, conspiracy thinking can be associated with one of these dysfunctional behaviours. In the second half of the 20th century, however, the psychoanalytic theory of conspiracy thinking was developed in contrast to the psychiatric explanation. This approach, popularised by Jacques Lacan, attempts to situate paranoia at the heart of human thinking and also to explain the role of the incessant chains of objects of desire and fantasies in conspiracy thinking (Glazier 2020: 107-108). This approach, in contrast to psychopathology which treats conspiracy thinking as an aberration, conceives conspiracy thinking as a way to cope with the complexity of the postmodern world shaped by increasingly impersonal regulatory mechanisms.

As Blanuša and Hristov (2020: 72) argue, conspiracy theories often attempt to present themselves as narratives that reveal some important truth by engaging in a 'symptomatic' reading of reality to discover a gap between the 'official' account of an event and the 'actual' motive behind the event. However, as Lacan (1981: 228-29) posits, this truth-seeking attempt is simply a product of one's object of desire. A conspiracy theorist is driven by a desire to know the truth, but since the truth is impossible because it is constantly sliding away, he can only sustain his desire by constantly plunging into endless further details. The conspiracy theorist begins to pay more attention to insignificant details, and this chain of insignificant details only become meaningful if it is read as a symptom of his desire for revelation that can never be fulfilled. Thus, according to Fenster (2008:

111), conspiracy theorists in their attempt to interpret events and to seek for truth only produce enormous chains of signifiers, each accompanied by affects and respective behaviours and then they digest, transform and recombine non-conspiratorial elements around the grand idea of a conspiracy.

During the mid-20th century, critical theory became popular as an alternative approach to understanding and theorising conspiratorial thinking. Theorists such as Max Horkheimer and Theodor Adorno attempted to describe the relationship between critical social philosophy and conspiracy theories, but it was Franz Neumann that brought this description to a logical conclusion with his concept of political alienation. According to Heins (2007: 791-92), conspiracy theorists appear to share some specific convictions about how the social world actually works: they believe that nothing happens by chance, nothing is as it is and everything is interconnected. Conspiracy theorists also separate human society into two groups, namely, the conspiratorial group with their boundless power and schemes, and the ordinary people who live in ignorance of, and are gullible to the conspiracy.

But, as Neumann (2017) sees it, in contemporary capitalist society, the power of organised groups can be of primary interest, however that does not necessarily suppose that organised groups are all-embracing 'super groups' that control social life or dominate society. For him, it is political and social alienation that makes people wrongly believe in the existence of organised conspiratorial groups. Alienation in this sense refers to an individual's inability to connect to others in a meaningful way, that is, an individual's feeling of disconnection and meaninglessness and an individual's feeling of powerlessness in a society (Neumann 2017: 624-26). This feeling of helplessness and disconnection is amplified by the imagination of the existence of some powerful actors working behind the scenes (Neumann 2017: 624-26). These affective behaviours (i.e. the feeling of helplessness and powerlessness), which are generated within the society, lead to the growing inability of citizens to think independently and to take part in the public life of the society, thus leading to political alienation.

Neumann defines political alienation as the conscious rejection of the whole political system that expresses itself as apathy because the individual sees no possibility of changing anything in the system through his efforts. Neumann, therefore, paints a vicious circle whereby the feeling of helplessness and lack of meaningful participation lead to apathy, apathy to the consolidation of secretive elite governance, elitism to the spread of conspiracy thinking, and conspiracy thinking to even more apathy. Having attempted a definition of the term 'conspiracy theories' and also having examined some theories of conspiracy

theories, I shall proceed to examine the coronavirus pandemic and some of the conspiracy theories that arose in relation to the pandemic.

The coronavirus pandemic

Very few phenomena throughout human history have shaped human societies and cultures the way outbreaks of infectious diseases have (Huremović 2019: 7). In December 2019, the world witnessed the outbreak of a novel disease identified as SARS-CoV-2/COVID-19 in Wuhan, Hubei, China. This novel virus has resulted in an ongoing pandemic with more than 50 million infection cases, about two million deaths and 18 million recovered cases across 222 countries and territories (WHO 2020a). SARS-CoV-2, otherwise known as coronavirus or COVID-19, is a viral infection that is responsible for respiratory illness, and is basically transmitted from one person to another through contact with the droplets of an infected person. Although most people can easily recover from the illness without specialised treatment, older people and those with underlying medical conditions such as cancer, chronic respiratory infections, diabetes and cardiovascular diseases are more likely to experience severe illness and death due to the virus. Symptoms of infection by the virus include shortness of breath, dry cough, fever and loss of smell and taste among others (Omaka-Amari et al. 2020: 88)

According to the World Health Organisation (WHO), COVID-19 is difficult to prevent and control because of its high infection rate and its potential to cause the hospitalisation and death of a huge number of people within the shortest time frame; therefore the best way to combat it is to adopt preventive measures that will reduce human exposure to the virus (WHO 2020b). Hence, countries are advised to adopt aggressive strategies such as detecting, testing, treating, isolating, tracing and mobilising their citizens in the response. Countries with a handful of cases are to prevent those cases from becoming clusters, and clusters are to be prevented from becoming community transmission. All countries must activate and scale-up crisis response mechanisms that is, be in touch with the communities and how they can protect themselves, get the hospitals ready, and train the health workers (Anjorin 2020: 202). In essence, according to the WHO Director-General, countries must take a whole-of-government, whole-of-society approach, built around a comprehensive strategy to prevent infections, save lives and minimise impact by applying the principles of the 5Ps: prevention, preparedness, public health, political leadership, and the people (WHO 2020c).

In response to the directives of the WHO, most countries of the world adopted various preventive and control measures such as lockdowns, quarantines, curfews, contact tracing and mass testing to contain the spread of the virus. Also, most countries developed COVID-19 task forces to coordinate and oversee

their states' inter-governmental efforts to contain the spread and impact of the pandemic as well as reflect and update new information and research emerging on the disease and its impact on populations. Nevertheless, the coronavirus pandemic still continues to pose a challenge to societies and economies at their core.

Although the impacts of the COVID-19 virus vary from country to country, most countries continue to witness a high mortality rate, an increase in poverty, unprecedented challenges to public health, economic and social disruption, loss of jobs and unemployment. As Demirbas and Bozkurt (2020: vii) comment, the COVID-19 pandemic, despite the advancement in science and technology, has not only unexpectedly affected the social and economic lives of societies but also disrupted individuals' mental health and well-being. People all around the world were suddenly confined to their homes as a result of the lockdown and movement restrictions, and nearly all economic activities in many countries have been slowed or halted. The pandemic continues to affect social and economic growth rates in both developed and developing countries as governments across the world have introduced strict measures to reduce social interactions between people, resulting in significant reductions in the activities of many sectors. As a result, the coronavirus pandemic is described as the most tragic event of the 21st century. Many who have lost either their loved ones or their jobs now look forward to the future with great uncertainty (WHO 2020d; WHO 2020e; Zoumpourlis et al. 2020).

The COVID-19 pandemic and conspiracy theories

When uncertain and challenging situations arise, humans, having a fundamental need to understand why such events happen, often develop sense-making narratives or beliefs to understand such situations, and these narratives often take the form of conspiracy theories. According to Inayat Ali (2020: 1), "natural disasters, wars, contagious outbreaks, epidemics, and pandemics, such as COVID-19, have accumulated multiple narratives and conspiracy theories". The coronavirus pandemic has generated such a number of rumours and conspiracy theories that the WHO coined a new term, "infodemic", to capture the misinformation trailing the pandemic (WHO 2020f: 2). Many of the conspiracy theories about the pandemic are associated with the origins and nature of the coronavirus. For instance, since the outbreak of the pandemic, stories about the origins of the coronavirus had been brewing but things began to take a serious turn when epidemiologists expressed uncertainty about the precise origin of the virus (Bolsen et al. 2020: 3). Hence, with the uncertainty about the origin of the

virus plus the human tendency to want to assess blame, numerous conspiracy theories regarding the origins of the virus began to surface.

One such conspiracy theory is the belief that the coronavirus was developed and released on purpose by a powerful country such as the US or China to spread chaos and to disrupt the economies of many countries (Duplaga 2020: 2). One version of the theory posits that the virus was accidentally or deliberately leaked from a Chinese research laboratory located near the Wuhan market in China. Proponents of this conspiracy theory assert that the virus was deliberately engineered in a Chinese laboratory that studies animal coronaviruses to produce an offensive biological weapon (Bolsen et al. 2020: 3). Despite the various attempts to disprove this particular conspiracy theory it continued to spread like wildfire and, to reinforce it, then US President Donald Trump expressed his belief in the conspiracy theory by dubbing the coronavirus the “Chinese virus” or the “kung-flu” (Riechmann & Tang 2020).

In response to this conspiracy theory – that China is responsible for the deliberate leak of the coronavirus – China in turn promoted another conspiracy theory that the US was responsible for the outbreak. In March 2020, for instance, Zhao Lijian, a Chinese foreign ministry spokesman, posted on his Twitter handle that “it might have been the US army that brought the virus to Wuhan” and a day after, he posted an article titled “Further evidence that the virus originated in the US”. Also, Larry Romanoff, a regular contributor to Twitter, claimed that the US military germ laboratory in Maryland might have been the original source of the virus because prior to the disease outbreak, the facility had been shut down due to an absence of safeguards to prevent pathogen leakages (Sardarizadeh and Robinson 2020). In response to this, however, the US government asserted that the conspiracy theory is “an aggressive and hawkish diplomatic strategy intended to deflect attention from China’s own missteps” (Meyers 2020).

Another conspiracy theory that has trailed the COVID-19 pandemic is the 5G conspiracy theory. In telecommunications, 5G is considered the fifth generation of wireless networks designed to deliver higher multi-Gbps peak data speed, ultra-low latency, massive network capacity and higher performance than the 4G network. However, between February and March 2020, several versions of the 5G conspiracy theory began to fly on the internet and in the media. One version of the theory claims radiation from 5G lowers one’s immune system which makes one more susceptible to the coronavirus (Meese et al. 2020: 4-6). Another version states that 5G is directly responsible for COVID-19.

Some versions suggest that COVID-19 is a made-up pandemic to cover up the harmful effects of 5G radiation while some posit that COVID-19 emerged from Wuhan because it had “been the guinea-pig city for 5G” (Bruns et al. 2020: 17-8).

A more prominent version claims that the pandemic was engineered by Bill Gates in an effort to depopulate an overcrowded planet, and that the coronavirus is only a pretext for distributing a deadly vaccine which will be activated by 5G radiation, leading to a mass depopulation of the world. Those who are said to be behind this conspiracy include Bill Gates, George Soros, the WHO, the United Nations, big tech firms including Huawei, and China and/or the United States (Bruns et al. 2020: 19).

Between May and June 2020, another conspiracy theory involving Bill Gates and micro-chip technology began to gain worldwide attention. This theory claims that the coronavirus pandemic is a cover for Bill Gates to implant traceable microchips in people. Roger Stone, a former adviser to Donald Trump, commented that “Bill Gates and others are using the virus for micro chipping people so we can tell whether you’ve been tested” (Goodman & Carmichael 2020a). In Italy, one version of the theory claims that the pandemic has been invented in order to get everyone vaccinated which will in turn bring money into the pockets of some people (Goodman & Carmichael 2020a). In Brazil, another version of the microchip theory claims that Bill Gates is finalising plans for a stamp-shaped vaccine that goes under one’s skin which will be linked to one’s social media profiles in order to control people through the 5G network (Goodman and Carmichael 2020b). A religious version even claims that the microchip is a technology of the “Anti-Christ” (Goodman & Carmichael 2020a). Well ahead of the production of the Pfizer/BioNtech’s COVID-19 vaccine, speculations began to spread that the coming vaccine was unsafe, unhealthy and was a product of a conspiracy. This theory claims that the vaccine contains a microchip developed by Bill Gates that is linked to cell towers through the 5G technology for the purpose of population monitoring (Lee 2021), and yet another version says that the vaccines are designed to change or alter people’s DNA and also, to introduce the coronavirus into people’s immune systems. Many of these conspiracy theories, however, have been developed and spread by anti-vaccine propagandists who have always held antagonistic sentiments about the production and use of vaccines.

The pandemic and conspiracy theories in Africa

Conspiracy theories about the pandemic have been widespread in Africa, undermining belief in COVID-19’s existence as well as in the curtailment measures put in place by governments across the continent. In Nigeria, conspiracy theories about the pandemic were spread by popular statesmen and influential clerics. In April 2020, Pastor Chris Oyakhilome, founder and president of a leading pentecostal church in Nigeria, in a YouTube video claimed that the lockdowns in Lagos and Abuja were to enable the Nigerian government to install 5G infrastructure. According to him, “The federal government was pushed to lockdown Abuja and

Lagos because of 5G. They already tested 5G in Abuja and they are engaging it already in Lagos. That's the reason the federal government had to lockdown Abuja and Lagos. So the 5G could be installed" (Ndinojuo 2020: 102). He also claimed that the reason for the social distancing campaign was to make sure people could not gather to protest or communicate with one another when they began to see the effects of 5G.

Pastor Oyakhilome was not alone in endorsing conspiracy theories; Bishop Oyedepo, another leading clergyman in Nigeria, claimed that the lockdown on churches was "a demonic attack as the forces of darkness are influencing people at various levels because the growth of the church is the greatest headache of the devil" (Egbunike 2020). He described the coronavirus as an anti-church virus because "the church where healing takes place all around the world is the one that is shut down. The market place where they collect diseases is open. This is an anti-church virus, and the God of the church neither sleeps nor slumbers." (Sobowale 2020)

In Nigeria, a newspaper report claimed that Nigerians were at risk of infection by hundreds of thousands of returnee Chinese workers. There was also a rumour that Chinese-made medical supplies had been contaminated with coronavirus and should therefore be returned to China. The Nigerian Medical Association, among many other professional and civic organisations, rejected the Nigerian government's invitation to a Chinese medical team to support the country's fight against coronavirus on account that "the Chinese are not out of the woods themselves and the spike in cases and death toll from COVID-19 in Italy coincided with the arrival of the Chinese in the guise of offering assistance" (Onyeji 2020).

In South Africa, where COVID-19 has infected nearly 2 million and killed about 50 000 people, there is considerable scepticism and there are many conspiracy theories about the existence of the virus as well as the measures taken to curb it. For instance, the Indaba Nurses Union, which was expected to play an important role in administering vaccines, directed its members to decline vaccination (Reuters 2020). In December 2020, the outgoing Chief Justice, Mogoeng Mogoeng, offered prayers in public against "any vaccine that is of the devil". These statements claim that governments have also been involved in propagating conspiracy theories about coronavirus. For instance, late Tanzanian President Magufuli often dismissed claims about the virus and described the vaccine as dangerous to people's health. The President of Madagascar levelled accusations of a cover up and connivance against WHO and big pharmaceutical companies which were against his unverified claim of having found the cure to COVID-19.

Contexts and contradictions of conspiracy theories in a pandemic

While existing theorisations of conspiracy theories (e.g. misattribution theory, pathology theory and alienation theory) provide valuable insights into the factors that motivate conspiracy thinking, it is doubtful whether any single theory is helpful enough to grasp the motivations and implications of conspiracy theories during the pandemic. Take alienation, for instance. Neumann's idea of political alienation as the ultimate condition for the spread of conspiracy thinking is insightful, given that alienated individuals experience the social world as unchangeable and see themselves as puppets in the hands of powerful groups and individuals. In this aspect, the massive corruption that has characterised COVID-19 contracts in countries like South Africa tend to further alienate a disillusioned public who believes the state has been captured by powerful interests (Reuters 2020).

As has been shown however, conspiracy theories have not been restricted to sections of the public who can be regarded as powerless. These theories have also been bandied about by some government leaders who by no means fit into the group of those that can factually be described as politically alienated. Also, religious figures, whether in the US or Nigeria, who have mobilised their members against science-driven responses to the pandemic are very influential people within and outside the realms of political power, due to the huge followings they command. It is not much help either, to explain those ideas away as pathologies that mirror the aberrant state of those who propound them, even if there are psychological factors responsible for the development of conspiracy theories as people try to satisfy their longing for understanding, accuracy, and subjective certainty (Douglas et al. 2019: 7).

While there is a way in which misattribution theory (a theory which holds that the cognitive machinery behind irrational beliefs such as conspiracy theories is the tendency to perceive illusory patterns or to connect stimuli that are unrelated) can help explain the conspiracy theories that have trailed the pandemic, the same cannot be described as borne out of ignorance in the Popperian sense (Abrams 2020). Rather, I think it is more illuminating to see such misattributions as wilful, deliberate, and reflective of the huge influence of religious figures on the continent (Obadare 2018). Even at that, an acceptance of the misattribution theory will only suffice in furthering our understanding of the emergence of the virus, while leaving more gaps about conspiracies around containment efforts, such as lockdowns and vaccinations. This is because the outbreak of this virus, like any other, and its subsequent evolvement to a pandemic, is an occurrence that can be (mis)attributed to any given person, institution, or group.

Containment and eradication efforts, on the other hand, are most often made by known groups, people and institutions, such as the government, thereby making it harder to ascribe them to some secretive force. For instance, the theory that Bill Gates is in cahoots with big pharmaceutical companies to manufacture gene-altering DNAs has not been able to explain the fact that China and Russia have developed vaccines of their own, independent of big Western pharmaceutical companies.

The global rise of populism is a major factor in the spread of conspiracy theories. Populism is an ideology or political approach that strives to appeal to ordinary people who feel that their concerns are disregarded by established elite groups (Cox 2017). This ideology does not only promote suspicion of foreigners and scepticism towards intelligent facts but it also tends to divide a population into “we” (that is, the common people) and “them” (that is, the powerful elites who allegedly conspire against the common people). Also, populist rhetoric is both a cause and a consequence of people’s distrust of medicine, scientists and policymakers. Thus, a breakdown in scientific communication between the scientific community and the people points to the possibility of people expressing scepticism towards scientific evidence and engaging in conspiracy thinking. When a large percentage of the population becomes apathetic to political engagement and knowledge seems to be less reliable and trustworthy, then we have a situation that is conducive to conspiracy thinking (Enders et al. 2020: 4; Heinz, 2007).

Social media can also be identified as a factor responsible for the development and spread of the COVID-19 “infodemic”. During the early days of the pandemic, many people relied on social media platforms as informational sources and because social media platforms rapidly transmit information to broad audiences at the fastest possible rate, they were widely used to spread conspiratorial beliefs, political propaganda, conspiratorial videos and articles. According to Romer and Jamieson (2020: 2), two research surveys conducted with a panel of US adults in late March and July reveal that about 19% believed that the CDC (Center for Disease Control and Prevention) exaggerated the danger posed by the virus to hurt President Trump, about 10% believed that the US government created the virus and about 23% believed that the Chinese government created the virus. The research also found that these beliefs were associated with the use of social media (e.g. Facebook and Twitter) and conservative media (e.g. Fox News, Rush Limbaugh, and Breitbart). The point then is that the combination of the massive growth in free expression facilitated by social media and the erosion of trust in social authorities as the guarantors of legitimate knowledge are equally important conditions for the spread and acceptability of conspiracy theories (Heinz 2007).

Defenders of conspiracy theories argue that they serve the positive purposes of keeping those in power in check by creating awareness that they are being watched, while also compelling them to be more accountable and transparent in the discharge of their duties (Raukka 2018; Dentith 2014; Pidgen 2007). For these reasons and more, conspiracy theories are said to deepen democracy and entrench transparency in the conduct of public affairs. While the above unintended consequences may indeed be true, there is no doubt conspiracy theories oftentimes create a 'we' against 'them' situation, thereby straining social cohesion and creating toxic divisions within the polity.

In many instances, conspiracy theories are not provable (in a situation where they become provable or backed up with factual evidence they cease to be conspiracy theories and become confirmed allegations, since conspiracy theories are narratives that lack epistemic proofs). Relying on them however can have measurable negative consequences, which in turn can be contested as the illusions of reality created by those behind such conspiracies. While this then seems to put us in a kind of epistemic bind as to whether conspiracy theories are real or not, one way to figure out conspiratorial claims that are likely untrue but no less dangerous is to consider their scale. While conspiracies are possible in theory, they are much less so on a very large scale. The sheer diversity of interests involved, and the multiple sources of information made possible by technology, make it highly improbable to be able to plan a pandemic hoax and sustain it over a long period. If this point is taken, and pandemics are real, conspiracy theories then become a serious challenge, as information with very low credibility value can have significant impact.

Critical to the effective management of any pandemic is cooperation between states, as well as within them, as the reduction of its spread depends on all segments of the society playing their parts. Conspiracy theories have however sowed divisions that undermine efforts to curtail the virus, resulting in the violation of social distancing rules and refusal to wear masks by many across the world who believe that these measures are part of one global agenda or another. Significant evidence has shown that conspiracy theories may have increased the spread of the COVID-19 by reducing people's willingness to socially distance and adhere to other measures put in place to limit the spread of the virus. For instance, in the US, although various social distancing measures are in place still, non-adherence rates remain close to 25%, which is substantially higher than in many other countries (Bierwiazzonek et al. 2020; Onyeji 2020). There have also been considerable challenges in enforcing lockdowns. In South Africa, violent protests led to the destruction of several 5G masts on the suspicion that they were installed to transmit the virus (Reuters 2021).

Furthermore, conspiracy theories around the pandemic have influenced people's attitude and perception towards COVID-19 vaccines even before they were produced. According to a sample survey by Ipsos Mori, about 46% of the French and more than 40% of Poles and Hungarians have refused to be vaccinated with the coronavirus vaccine because of their belief that the COVID-19 vaccines are Bill Gates's effort to insert chips into their body (PharmTech 2020). As Bertin et al. (2020: 2) comment, conspiracy theories about vaccines may foster distrust toward health authorities and their recommendations which could potentially impede efforts to put an end to the pandemic. In Nigeria and South Africa, as in many other African countries where conspiracy theories about the use of COVID-19 vaccines to depopulate Africa are rife, vaccine scepticism has been widespread.

It can be argued, of course, that COVID-19 has had a limited impact in Africa as compared to other parts of the world. While this is the case, it is beside the point. First, the rapid mutation of the virus, which according to experts has thrown up a South African mutation among others, suggests that it can take a significantly dangerous turn if not well managed. Two, even were the impact of the coronavirus pandemic in Africa to remain low until its effective curtailment, the proliferation of conspiracy theories has serious implications for the management of future pandemics in a continent with limited human and material capacity for robust responses to outbreaks of diseases or other crises of big magnitude. In some parts of the continent, there have been recent reports of the reoccurrence of the deadly Ebola virus, with many people in a country like Guinea calling the outbreak a conspiracy and defying prescribed safety measures (Aljazeera 2020). Conspiracy theories therefore pose a big challenge to the management of pandemics, and are best kept minimal through all reasonable means both by the people and those in authority.

Conclusion

Curtailling the effects of conspiracy theories in Africa requires diverse yet coordinated steps to strengthen the credibility and legitimacy of the state. Central to this is accountability and transparency by the various governments across the continent. The bane of Africa today is most governments' paternalistic approach to governance, in which a few make decisions for the majority of the people without the latter's consent. Without an entrenched culture of participatory governance, securing the confidence of the people in times of crises becomes more difficult than it would otherwise have been. One other driver of conspiracy theories in Africa is illiteracy. While conspiracy theories also abound in literate societies, they find very fertile soil in a continent that is still given to much

superstition, and is somewhat distrustful of science. Given that the continent has the highest education exclusion rate in the world (UNESCO 2019), it is no surprise that religious entrepreneurs who enjoy massive following have sought to fill the gap and have acquired the status of authorities on matters spiritual, scientific, political and economic.

Related to the above, some politicians in Africa have resorted to spreading conspiracy theories, especially about the pandemic, banking on the belief that these would resonate with the people. Such politicians then seek to project themselves as protectors of the people against some dark global interests seeking to destroy them either through infections or vaccination. Such populist rhetoric gains easy traction within a people who are poor, uneducated, and unable to hold power accountable.

Lastly, it is difficult to understand or manage conspiracy theories without emphasising the role of technology and social media. The role of digital technology in the mass dissemination of information, including false and erroneous information, has forced some countries to adopt censorial measures that shut out unwanted news. Censorship can however be a dangerous tool of political suppression in a continent that needs more and not less citizen participation in civic discourse and political engagement. Engaging with platform providers and making them take responsibility for what they disseminate is a better way of minimising the spread of unverified information, especially that which undermines efforts to contain a crisis like the COVID-19 pandemic.

Conspiracy thinking, propelled by a variety of factors, appears to have peaked at the intersection of the restricted opportunities for the meaningful participation of individuals in an increasingly formalistic democratic process, the unlimited possibilities of communication that are symbolised by, and available through, social media, manipulative political leadership and a psychological disposition to make sense of the uncertain. The forces, institutions and structures that drive conspiracy theories are diverse and so are exercised through what Foucault (1980: 98) refers to as a net-like organisation, within a system of differentiations which permits one to act upon the actions of others: differentiations determined by the law or by traditions of status and privilege; economic differences; shifts in the process of production; linguistic or cultural differences; differences in know-how and competence; and so forth (Foucault, 1982: 792). Managing conspiracy theories therefore requires an appreciation of how multiple factors work together to create patterns and contradictions in a way that is reflective of the dynamics at play.

While conspiracy theories may fall within the boundaries of the right to hold opinions and express them, especially in democratic societies, the question about

whether it is right to spread information that may well be misleading during a pandemic demands greater attention. One way to ensure that pandemics are managed with limited disinformation then is for the authorities to engage continuously and transparently with the people as they demand actions that deviate from usual routine as part of containment measures. When government institutions work hard enough to build trust and gain the cooperation of the people, countering conspiracy theories that undermine efforts at saving lives become easier.

As has been noted though, conspiracy theories sometimes emanate not from the people but by the very people in government whose duty it is to provide guidance. In such a situation, it is important that the people serve as a check on the government by insisting on verifiable justification for positions taken in relation to the safety of the people in a pandemic. Public health and safety are serious issues that ought not to be left to the personal dispositions and idiosyncrasies of those in government. Conspiracy theories will likely continue to be a part of modern society for a very long time to come, and will gain the most traction in times of crisis. However, finding ways to minimise their impact without infringing on the rights of the people to ask questions and hold those in power accountable remains important, especially in Africa.

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Bibliography

- ABRAMS Z. 2020. What do we know about conspiracy theories? American Psychological Association. Available at: <https://www.apa.org/news/apa/2020/conspiracy-theories> [accessed on 31 October 2021]. <https://doi.org/10.1037/e511032020-001>
- ALI I. 2020. Impacts of rumours and conspiracy theories surrounding COVID-19 on preparedness programs. *Disaster Medicine and Public Health Preparedness*: September 9: 1-6. <https://doi.org/10.1017/dmp.2020.325>
- KONATE F AND ALAHOUM R. 2021. Guineans sceptical as gov't steps up fight against Ebola. *Aljazeera*. 22 February. Available at: <https://www.google.com/amp/s/www.aljazeera.com/amp/news/2021/2/22/>

- guineans-skeptical-as-govt-steps-up-fight-against-ebola-outbreak [accessed on 31 October 2021].
- ANJORIN AA. 2020. The coronavirus disease 2019 (COVID-19) pandemic: a review and an update on cases in Africa. *Asian Pacific Journal of Tropical Medicine* 13(5): 199-203. <https://doi.org/10.4103/1995-7645.281612>
- BERGEN P. 2020. September 11 attacks. *Encyclopedia Britannica*. Available at: <https://www.britannica.com/event/September-11-attacks> [accessed on 31 December 2020].
- BERTIN P, NERAK AND DELOUVEE S. 2020. Conspiracy beliefs, rejection of vaccination, and support for hydroxychloroquine: a conceptual replication-extension in the COVID-19 pandemic context. *Frontiers in Psychology* 11(565128): 1-9. <https://doi.org/10.3389/fpsyg.2020.565128>
- BIERWIACZONEK K, KUNST JR AND PICH O. 2020. Belief in COVID-19 conspiracy theories reduces social distancing over time. *Applied Psychology: Health and Well-Being* 12 (4): 1270-1285. <https://doi.org/10.1111/aphw.12223>
- BLANUŠA N AND HRISTOV T. 2020. Psychoanalysis, critical theory and conspiracy theory. In: Butter M and Knight P (eds). *Routledge handbook of conspiracy theories*. New York: Routledge. https://doi.org/10.4324/9780429452734-1_5
- BOLSEN T, PALM R AND KINGSLAND JT. 2020. Framing the origins of COVID-19. *Science Communication* 42(5): 1-24. <https://doi.org/10.1177/1075547020953603>
- BRUNS A, HARRINGTON S AND HURCOMBE E. 2020. "Corona? 5G? Or both?": The dynamics of COVID-19/5G conspiracy theories on Facebook. *Media International Australia* 177(1): 12-29. <https://doi.org/10.1177/1329878X20946113>
- BYFORD J. 2011. Psychology and conspiracy theory. In: B Jovan (ed). *Conspiracy theories: a critical introduction*. London: Palgrave Macmillan. <https://doi.org/10.1057/9780230349216>
- COX M. 2017. The rise of populism and the crisis of globalization: Brexit, Trump and beyond. *Irish Studies in International Affairs* 28: 9-17. <https://doi.org/10.3318/isia.2017.28.12>
- DEMIRBA D AND BOZKURT V. 2020. Introduction: the COVID-19 pandemic and its economic, social and political impacts. In: Dilek D, Veysel B and Sayim Y (eds). *The COVID-19 pandemic and its economic, social and political impacts*. Istanbul: Istanbul University Press. <https://doi.org/10.26650/B/SS46.2020.006>
- DENTITH M. 2014. *The philosophy of conspiracy theories*. New York: Palgrave Macmillan. <https://doi.org/10.1057/9781137363169>
- DOUGLAS KM, USCINSKI JE, SUTTON RM, CICHOCKA A, NEFES T, ANG CS AND DERAVI F. 2019. Understanding conspiracy theories. *Advances in Political Psychology* 40(1): 3-35. <https://doi.org/10.1111/pops.12568>
- DUPLAGA M. 2020. The determinants of conspiracy beliefs related to the COVID-19 pandemic in a nationally representative sample of internet users. *International*

- Journal of Environmental Research and Public Health* 17(7818): 1–15. <https://doi.org/10.3390/ijerph17217818>
- EGBUNIKE N. 2020. Nigerian pastor spreads COVID-19 conspiracies and disinformation. *Global Voices*. 15 May. Available at: <https://www.google.com/amp/s/globalvoices.org/2020/05/15/nigerian-pastor-spreads-COVID-19-conspiracies-and-disinformation/amp/> [accessed on 19 January 2021].
- ENDERS AM, USCINSKI JE, KLOFSTAD C AND STOLER J. 2020. The different forms of COVID-19 misinformation and their consequences. *The Harvard Kennedy School Misinformation Review* 1(8): 1–21. <https://doi.org/10.37016/mr-2020-48>
- FENSTER M. 2008. *Conspiracy theories: secrecy and power in American culture*. London: University of Minnesota Press.
- FOUCAULT M. 1980. Two lectures on power. In: Colin G (ed). *Power/knowledge*. New York: Pantheon.
- FOUCAULT M. 1982. The subject and power. *Critical Inquiry* 8(4): 777–795. <https://doi.org/10.1086/448181>
- GIRARD P. 2020. Conspiracy theories in Europe during the twentieth century. In: Butter M and Knight P (eds). *Routledge handbook of conspiracy theories*. New York: Routledge. https://doi.org/10.4324/9780429452734-5_4
- GLAZIER JW. 2020. The paranoia of popular culture: Lacanian psychoanalysis and music videos. *The Popular Culture Studies Journal* 8(2.5): 107–125.
- GOODMAN J AND CARMICHAEL F. 2020a. Coronavirus: Bill Gates ‘microchip’ conspiracy theory and other vaccine claims fact-checked. *BBC News*. 30 May. Available at: <https://www.google.com/amp/s/www.bbc.com/news/amp/52847648> [accessed on 15 January 2021].
- GOODMAN J AND CARMICHAEL F. 2020b. Coronavirus: 5G and microchip conspiracies around the world. *BBC News*. 27 June. Available at: <https://www.google.com/amp/s/www.bbc.com/news/amp/53191523> [accessed on 15 January 2021].
- GORVETT Z. 2020. What we can Learn from conspiracy theories. *BBC Future*. 22 May. Available at: <https://www.bbc.com/future/article/20200522-what-we-can-learn-from-conspiracy-theories> [accessed on 31 October 2021].
- HEINS V. 2007. Critical theory and the traps of conspiracy thinking. *Philosophy & Social Criticism* 33(7): 787–801. <https://doi.org/10.1177/0191453707081675>
- HUREMOVIĆ D. 2019. Brief history of pandemics (pandemics throughout history). In: Damir H (ed). *Psychiatry of pandemics: a mental health response to infection outbreak*. Switzerland: Springer Nature. <https://doi.org/10.1007/978-3-030-15346-5>
- LACAN J. 1981. *The seminar of Jacques Lacan, book 3, The psychoses 1955–1956*. New York: Norton.

- LAJKA A. 2020. Pathologist falsely claims COVID-19 is a hoax, no worse than the flu. *AP News*. 2 December. Available at: <https://apnews.com/article/fact-checking-9765563716> [accessed on 18 January 2021].
- LEE JD. 2021. The utter familiarity of even the strangest vaccine conspiracy theories. *The Atlantic*. 11 January. Available at: <https://www.google.com/amp/s/amp.theatlantic.com/amp/article/617572/> [accessed on 15 January 2021].
- MEESE J, FRITH J AND WILKEN R. 2020. COVID-19, 5G conspiracies and infrastructural futures. *Media International Australia* 177(1): 30-46. <https://doi.org/10.1177/1329878X20952165>
- MEIGS J. 2005. The 9/11 lies are out there. *Popular Mechanics*. 4 February. Available at: <https://web.archive.org/web/20110218215834/http://www.popularmechanics.com/technology/military/news/1230517> [accessed on 31 December 2020].
- MEYERS SL. 2020. China spins tale that the U.S. Army started the coronavirus epidemic. *New York Times*. 7 July. Available at: <https://www.google.com/amp/s/www.nytimes.com/2020/03/13/world/asia/coronavirus-china-conspiracy-theory.amp.html> [accessed on 13 January 2021].
- MILMAN O. 2020. Seven of Donald Trump's misleading coronavirus claims. *The Guardian*. 28 March. Available at: <https://www.theguardian.com/us-news/2020/mar/28/trump-coronavirus-misleading-claims> [accessed on 18 January 2021].
- MOORE A. 2016. Conspiracy and conspiracy theories in democratic politics. *Critical Review* 28(1): 1-23. <https://doi.org/10.1080/08913811.2016.1178894>
- NDINOJUO BE. 2020. 5G, Religion, and misconceptions in communication during COVID-19 in Nigeria. *Jurnal the Messenger* 12(2): 97-110. <https://doi.org/10.26623/themessenger.v12i2.2282>
- NEUMANN F. 2017. Anxiety and Politics. *TripleC* 15(2): 612-636. <https://doi.org/10.31269/triplec.v15i2.901>
- OBADARE E. 2018. *Pentecostal republic: religion and the struggle for state power in Nigeria*. London: Zed Books. <https://doi.org/10.5040/9781350221734>
- OLATUNJI OS, AYANDELE O, ASHIRUDEEN D AND OLANIRU OS. 2020. "Infodemic" in a pandemic: COVID-19 conspiracy theories in an African Country. *Social Health and Behaviour* 3(4): 152-157. https://doi.org/10.4103/SHB.SHB_43_20
- OMAKA-AMARI LN, ALEKE C, OBANDE-OGBUINYA NE AND NGWAKWE PC. 2020. Coronavirus (COVID-19) pandemic in Nigeria: preventive and control challenges within the first two months of outbreak. *African Journal of Reproductive Health* 24(2): 87-97.
- ONYEJI E. 2020. Coronavirus: Nigerian doctors reject country's plan to invite Chinese medical team. *Premium Times*. 6 April. Available at: <https://www.premiuntimesng.com/health/health-news/386163-coronavirus->

- nigerian-doctors-reject-countrys-plan-to-invite-chinese-medical-team.html [accessed on 20 January 2021].
- PAGÁN VE. 2020. Conspiracy theories in the Roman Empire. In: Butter M and Knight P (eds). *Routledge handbook of conspiracy theories*. New York: Routledge. https://doi.org/10.4324/9780429452734-5_1
- PAULY M. 2020. Conspiracy theories. *Internet Encyclopedia of Philosophy*. Available at: <https://iep.utm.edu/conspira/#H1> [accessed on 30 October 2021].
- PHARMACEUTICAL TECHNOLOGY. 2020. Europeans distrustful about COVID-19 vaccines – leading macroeconomic influencers. *Pharmaceutical Technology*. 14 December. Available at: <https://www.pharmaceutical-technology.com/features/europeans-distrust-covid-vaccines/> [accessed on 21 January 2021].
- PIDGEN C. 1995. Popper revisited, or what is wrong with conspiracy theories? *Philosophy of the Social Sciences* 25(1): 3-34. <https://doi.org/10.1177/004839319502500101>
- PIDGEN C. 2007. Conspiracy theories and the conventional wisdom. *Episteme* 4(2): 219-232. <https://doi.org/10.3366/epi.2007.4.2.219>
- POPPER K. 1962. *Conjectures and refutations: the growth of scientific knowledge*. New York: Basic Books.
- POPPER K. 1966. The open society and its enemies, vol. 2, *The high tide of philosophy: Hegel, Marx and the aftermath* (5th edition). London: Routledge.
- RAUKKA J. 2018. Conspiracies and conspiracy theories: an introduction. *Argumenta* 3(2): 205-216.
- REUTERS STAFF. 2020. South Africa investigates COVID-19 contracts for corruption. *Reuters*. 20 October. Available at: <https://www.reuters.com/article/idUSL8N2HB2U0> [accessed on 31 October 2021].
- RIECHMANN D AND TANG T. 2020. President Trump dubs COVID-19 the ‘Chinese virus’ – despite hate crime risks, rise in virus related discrimination reports. *Chicago Tribune*. 18 March. Available at: <https://www.google.com/amp/s/www.chicagotribune.com/coronavirus/ct-nw-chinese-coronavirus-hate-speech-20200318-> [accessed on 13 January 2021].
- ROMER D AND JAMIESON KH. 2020. Conspiracy theories as barriers to controlling the spread of COVID-19 in the U.S. *Social Science & Medicine* 263(113356): 1-8. <https://doi.org/10.1016/j.socscimed.2020.113356>
- SARDARIZADEH S AND ROBINSON O. 2020. Coronavirus: US and China trade conspiracy theories. *BBC News*. 26 April. Available at: <https://www.google.com/amp/s/www.bbc.com/news/amp/world-5222433> [accessed on 13 January 2021].
- SOBOWALE R. 2020. Nigeria’s coronavirus is anti-church virus, gods of the land behind it – Bishop Oyedepo. *Vanguard*. 29 June. Available at: <https://www.google.com/amp/s/www.vanguardngr.com/2020/06/>

- nigerias-coronavirus-isanti-church-virus-gods-of-the-land-behind-it/ [accessed on 19 January 2021].
- UNESCO INSTITUTE FOR STATISTICS. 2019. *Education in Africa*. Available at: <http://uis.unesco.org/en/topic/education-africa> [accessed on 13 January 2021].
- USCINSKI JE. 2020. *Conspiracy theories: a primer*. Lanham: Rowman & Littlefield. <https://doi.org/10.1093/oxfordhb/9780190860806.013.21>
- VAN PROOIJEN J. 2018. *The psychology of conspiracy theories*. New York: Routledge. <https://doi.org/10.4324/9781315525419>
- VAN PROOIJEN J AND DOUGLAS KM. 2017. Conspiracy theories as part of history: the role of societal crisis situations. *Memory Studies* 10(3): 323-333. <https://doi.org/10.1177/1750698017701615>
- WORLD HEALTH ORGANISATION. 2020a. Coronavirus disease (COVID-19) Pandemic. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> [accessed on 6 January 2021].
- WORLD HEALTH ORGANISATION. 2020b. Coronavirus. Available at: https://www.who.int/health-topics/coronavirus#tab=tab_1 [accessed on 6 January 2021].
- WORLD HEALTH ORGANISATION. 2020c. WHO Director-General's opening remarks at the media briefing on COVID-19 – 11 March 2020. Available at: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> [accessed on 7 January 2021].
- WORLD HEALTH ORGANISATION. 2020d. Public statement for collaboration on COVID-19 vaccine development. Available at: <https://www.who.int/news/item/13-04-2020-public-statement-for-collaboration-on-covid-19-vaccine-development> [accessed on 8 January 2021].
- WORLD HEALTH ORGANISATION. 2020e. COVAX: working for global equitable access to COVID-19 vaccines. Available at: <https://www.who.int/initiatives/act-accelerator/covax> [accessed on 8 January 2021].
- WORLD HEALTH ORGANISATION. 2020f. *Coronavirus disease 2019 (COVID-19) situation report – 13*. Geneva: World Health Organisation.
- ZOUMPOURLIS V, GOULIELMAKI M, RIZOS E, BALIOU S AND SPANDIDOS DA. 2020. The COVID-19 pandemic as a scientific and social challenge in the 21st century. *Molecular Medicine Reports* 22: 3035-3048. <https://doi.org/10.3892/mmr.2020.11393>