

Leadership Qualities for Confronting Existential Threats[^]

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The contemporary era is one of global risks and existential threats that represent a profound challenge for people, organisations and their leaders (Beard et al, 2023; WEF, 2024a & b; Coulson-Thomas, 2024). It is also characterised by a variety of related opportunities and trends and developments that create new possibilities and options as well as additional dilemmas, problems and pressures upon attention, capabilities, and resources. For many, past optimism appears to have given way to insecurity and uncertainty, resulting in stress. Not surprisingly, many people are anxious, concerned and worried about the present situation and their future prospects. In many countries there is increasing demand for mental health and well-being services. Younger people may delay starting a family and for some, even in developed countries, home ownership may seem a remote possibility.

The combination of existential risks currently faced has been described as unprecedented and is likely to persist for the foreseeable future (Ord, 2020). The number and nature of risks and threats is such as to raise questions about the qualities that current and future people in authority will require to confront and handle them as they unfold. Low probability risks and threats and slow burn emerging or potential crises have long presented a challenge for political, business, educational and professional leaders (Omand, 2013). Other priorities, pressing immediate issues, uncertainty and competing claims for their time and available and deployable resources can often be used by busy political and business leaders to rationalise avoidance or delay and justify parking an issue or threat.

Different Categories of Leader and Leadership

Political leaders may recognise that the prime duty of a government is to defend and ensure the security of a country's population, but budget and policy priorities in democracies tend to reflect matters that impinge upon people's daily lives and influence how they will vote. Rather than make electors aware of external threats such as nuclear weapons and pandemics, a government may underplay or conceal them so as not to cause alarm, or to avoid scrutiny and public debate for reasons of national security. Questions have been raised about the nature and meaning of security and survival in international politics in the light of multiple global risks and existential threats (Sears, 2021). Issues that deserve attention may be parked or overlooked. Forums for their discussion may be limited or stymied by geopolitical divides.

Existential risks and threats also present challenges for business leaders. They raise questions concerning business and corporate survival and security, and the aspirations, assumptions, perceptions, motivations and risk appetites of boards with international ambitions (Coulson-Thomas, 2024). Reassessment of options, possibilities and what forms of preparation might be realistic under different scenarios may be required. Certain existential threats may feature among risks of concern to some business leaders, but there are others that may not be on their radars. The top three key business risks for 2024 according to IOD UK members are global economic slowdown, rising geopolitical tensions and cyber security risks, followed by artificial intelligence misuse, the US presidential election outcome, extreme weather events, global trade war and global health risks (IOD UK, 2024).

Multiple issues and threats are international and of concern to both political and business leaders. Many existential threats are also the result of human activities. Climate change is an increasingly evident one (IPCC, 2021). The Covid-19 pandemic is an example of another existential risk that could be self-inflicted, as the ‘escape from a laboratory in Wuhan’ hypothesis is plausible in relation to work being carried out there and what is known about protective arrangements (Wade, 2021). This article will look at the nature of leadership and leadership qualities that might be required to address existential threats, including the climate crisis which affects the health of the planet and the survival of other species in addition to our own (Zakus, 2023). It will consider existential threats and how they are portrayed, collective responses, leadership and governance challenges, and future leadership requirements.

The article is written from a democratic and market economy perspective. It addresses issues that may be encountered by leaders in these contexts. Different considerations may apply in authoritarian systems and command economies, in which dictatorial leaders may pay less attention to, or even ignore, the views of others when pursuing personal objectives. In recent years certain democracies have come under threat from such individuals (Rachman, 2022). Fundamental divisions appear to be opening between groupings of democracies and autocracies and the great powers around which different states may coalesce (Niblett, 2024; Sanger, 2024). In relation to collective responses to existential threats, leaders may vary in their pragmatism, flexibility and willingness to cooperate across ideological divisions on an issue-by-issue basis, according to situation and circumstances (Garton Ash et al, 2023).

Existential Challenges and Threats

Populations may be more aware of some existential challenges than others. As they loom closer, some people become more accustomed to certain existential threats and high risks and might view them as both a consequence of their roles and a part of their daily lives. For example, extreme threats and the possibility of death could form part of the social identity of a fighter pilot and be accepted as a requirement of their role, expected performance and for retaining group membership (Sonpar et al, 2024). Social identity and group processes might also influence safety culture, behaviour and what is considered as safe and appropriate in the circumstances (Tear and Reader, 2023). Over time and as events unfold, might expectations of the responses of political and business leaders to existential risks and threats change? In recent years in advanced countries people have become less optimistic (Duffy, 2021).

Communities and societies might also become accustomed to certain slow burn risks and better able to tolerate them and more willing to discuss them, but how might this change as moral and social courage be required to cope and respond? A threat such as climate change can cause individual anxiety and collective concern that may moderate it and increase pro-environment sentiments and pro-environment individual and collective action (Stollberg and Jonas, 2021). Will such changes occur quickly enough to accommodate the increasing pressure and necessity to accelerate climate adaptation and mitigation measures? Even when action is necessary, leaders may be reluctant to put those for whom they are responsible at a competitive disadvantage. This can result in progress at the speed of the slowest.

Existential threats are often technical and sometimes technological. Understanding of them may require bringing together scientists and experts from different disciplines. There may be

more specialists than people who know enough about each area to be able to synthesise different contributions and present a balanced picture and practical policy options in a form that a busy decision maker might be able to understand. Due to the lack of collaboration between physical scientists and economists, estimates of the economic consequences of climate change received by key decision makers can miss the full impacts of extreme weather events, and the potential for cascading risks and tipping points (Royal Society, 2023). There may be far more people studying individual elements of problems from particular disciplinary perspectives than providing holistic and feasible solutions.

Matters are often brought to political and business decision makers that others, including special interests, feel they might be able to do something about. The nature and range of existential threats is such that individual states and governments, and even major enterprises, may not be able to tackle large scale and complex emergencies alone. Does this create a moral responsibility for coordination, collaboration and joint action (Erskine, 2022)? As threat assessments increase and multiply, where, when and in what form might political, business and community leaders have such a responsibility and/or feel obligated to engage in joint action with other players to tackle a challenge such as climate change or a pandemic?

Technological Existential Threats

Scientists and technologists can be the source of problems as well as of advice on how to deal with them and existential threats. Scientific and technological advances can expose humanity to risks and threats that could and/or have been existential for some people (Wade, 2021). For example, the challenge of controlling AI, and particularly advanced general intelligence (AGI), has long been recognised (Russell, 2019). Alongside transformational benefit possibilities, applications of AI, and especially AGI, can give rise to catastrophic risks such as weaponisation by bad actors and the loss of control over advanced AI systems (Gladstone, 2024). Multiple AI/AGI risks could have societal-scale impacts (CAIS, 2023).

AI/AGI risks can be decomposed into categories that might require intervention from political and/or business leaders (Hendrycks et al, 2023). AI/AGI could be used by malicious actors, in unsafe ways due to competitive pressures to quickly adopt and deploy them, and their very complexity may cause problems and result in applications that are difficult to control. These causes of AI risks have been disaggregated into intentional, environmental and/or structural, accidental, and internal categories (Hendrycks et al, 2023). Each may present multiple issues for decision makers, such as who at what level and with whom should be responsible for what? The combination of parties required can vary by existential risk.

In rapidly evolving fields laws and regulations may lag behind requirements. Increasingly, political decision makers may find themselves having to collaborate with and be briefed on regulatory and control issues, by entities, such as developers of technologies with a vested interest in what is to be regulated and controlled. Their focus may be profit for shareholders and the best interests of a company and its stakeholders, rather than a wider public good that ought to be the concern of governments. If a technology has potential to be transformational, does this create an onus upon leaders to ensure its adoption and application benefits humanity (Georgieva, 2024)? This may require balanced assessment, including honest and frank acknowledgement of downside risks and collective action to tackle them.

Addressing and accommodating the incompatibilities of human and machine approaches to reasoning and learning can represent a multifaceted and profound challenge and raises issues that many people and organisations may not be aware of (Muggleton and Chater, 2021). Notwithstanding them, applications of AI/AGI are likely to be increasingly used to monitor, assess and respond to the emergence of other existential threats. Like risks, existential threats can be inter-related and inter-dependent. An AI/AGI application may influence and shape how another existential risk is perceived, categorised and portrayed (Sommer and von Querfurth, 2024). Care needs to be taken to ensure that using a technology to handle aspects of one problem does not give rise to others. Technological innovations and their application should be considered and responsible, and can require responsible leadership (Medhat, 2023).

Assessing and Portraying Existential Threats

How an existential threat is described and compared with others can influence how seriously it is perceived by decision makers. Scientific opinions that portrayed climate change as a security threat second only to nuclear war may be responsible for it being recognised as potentially existential and taken more seriously, including by politicians and governments (Allan, 2017). Other existential threats have not been so linked to regularly occurring events. The 2024 WEF Global Risk Report ranks misinformation and disinformation as the top risk in terms of likely impact over a two-year period, when a half of the world's population is expected to be involved in some form of election (WEF, 2024c & d). Scepticism and a willingness to speak up is required in a data driven world in which misinformation can arise that might not be detected by colleagues (Bergstrom and West, 2021).

Scientific, business, political and media views may vary on whether a risk or threat is potentially existential, according to differing perspectives and considerations such as existential for whom, where and when and possibilities for response and recovery. Adverse impacts such as destruction, death, failure or the loss of potential or future prospects of people, organisations, communities and/or institutions may well be considered existential by those affected. Existential threats, could threaten to wipe out past achievements, cause great harm to current generations and destroy likely prospects of future ones (Ord, 2020). While some outcomes might be irreversible, prospects short of human extinction might be recoverable, even though they might be curtailed and considered unacceptable.

By the time a consensus emerges that a risk is existential, it may be too late to address it. Assessments of risks and existential threats and their likely impacts might benefit from scientific analysis and applications of AI to investigate multiple and inter-related data fields, authoritative value judgements involving choices, trade-offs and the reconciliation of contending interests. Human involvement may be needed for them to be accepted as legitimate. Scepticism is required when claims are made and repeated about the origins of threats and who or what is responsible for them (Wade, 2021). People and organisations are often defensive when liabilities, livelihoods, funding and reputations are at stake. Media reporting may be selective or exaggerated to attract attention and interest readers.

Media coverage of certain activities such as terrorism and immigration may result in people not directly affected by them fearing that they might be in the future and considering them to be existential threats to their lives or livelihoods. Reactions can sometimes lead to polarised

political responses, which is an increasing challenge for decision makers to contend with (WEF, 2024d).. For some this might lead to calls for more radical action and the adoption of alternative frames of reference and philosophies (Flus and Frim, 2022). Reactions can also be defensive to avoid the disclosure of conflicts of interest or risks to other ongoing and desired activities (Wade, 2021). Initial reactions may also be instinctively protective when people and communities are directly affected. They may look to governments for help and support.

Sometimes it may be necessary to disaggregate data to find communities that are much more vulnerable and adversely impacted than an overall picture and/or trend might suggest. Marginalised and remote communities can be disregarded by decision makers. General trends can encompass trajectories that are non-linear, and averages can conceal particularly acute impacts in certain locations and contexts (Royal Society, 2023). The full consequences of a crisis or catastrophe may only be apparent after an event. Impacts of climate change on nature, natural capital and human health may be overlooked or ignored when the focus is on narrow economic consequences rather than adaptation, social and other wider considerations (Royal Society, 2023).

Collective Responses to Existential Threats

The nature of existential threats is such that collective rather than individual leadership may be required to initiate and coordinate the delivery of effective responses. Corporate, community and public institutional structures and allocations of roles and responsibilities do not always match the challenge they represent. Where collective actions are required, they need to be at the right level, and they might have to be multi-disciplinary. Steps may also need to be taken to ensure that considerations and impact costs outside of the remit of involved public bodies are not overlooked (Iacobucci and Trebilcock 2022). Political and business leaders may have to seek required contributions from those who feel a challenge, risk or threat does not fall within their role descriptions or departmental responsibilities.

The scale, complexity and expense of required responses to certain recent and current existential threats, and public, political and business reactions to them, have parallels with past ones (Foster and Steinhilber, 2020). These include denial, avoidance and delaying behaviour, abstruse scientific debates and tensions between short-term profit and/or budget constraints and the cost of long-term infrastructure investments, and between individualism and communitarianism (Foster and Steinhilber, 2020). In response to the current challenge of climate change, might we run out of time before a consensus is reached amongst those involved on the most appropriate next steps, and requirements for relevant and resilient infrastructures are agreed at local and central level?

Collective responses can lead to discussions about burden sharing and establishing criteria for allocating costs. Who should pay for what in relation to the impacts of existential threats and responses to them? As the cost of adaptation and mitigation in the face of existential threats increases, some voices may advocate expecting people and organisations to accept or suffer greater burdens and/or impacts in order to limit expenditures. In the case of climate change, could applying the principle of non-regression to the protection of public welfare and individual rights be used to prevent their erosion and the weakening of provisions in areas such as environmental protection and anti-pollution measures (Sullivan, 2023)? Some leaders worry about ‘knock on consequences’ and ‘setting a precedent’.

Possible Challenges in Securing Consensus

Existential threats and other global risks are often inter-related and inter-dependent (WEF, 2024c & d). The vulnerability some face may also derive from the conduct of others over whom they have little or no control. The cause as well as the impacts and required responses may be collective and shared. Some parties may fret over possible descending spirals of danger and increasing loss, while others seek ascending ones to greater resilience. Rather than worry about the triggering of negative tipping points, what steps could be taken to create positive tipping points that might assist in planetary recovery, whilst protecting people and promoting peace, and supporting a green energy transition (Nurse, 2023)? How do downside reduction and gain rank in priority for the parties that may need to be involved, in relation to alternative claims upon resources? Are they affordable and how should they be funded?

Lessons from global responses to one existential threat, such as the importance of prevention and preparation, global collaboration and rapid response may be relevant for preparing for and dealing with others (Salami, 2022). However, various parties involved in collective responses might derive different lessons, not all of which may be relevant and applicable, appropriate and/or affordable. Views and expert advice, even when broadly consistent, can also vary on feasibility, priorities and the practicality of proposed responses. Some parties may also want to move more quickly than others. Consensus can take time to build.

Consensus within a leadership and/or collaborating team should not be assumed. Differences of perspective, priority and divisions can and do arise. Even while a threat looms, some may think about winners and losers, and who gains the most, rather than common interests and shared survival. Words of caution and requests for clarification may be viewed as negative, or a potential source of unwelcome and unnecessary delays, while the cost of inaction increases. Consensus and fairness issues may arise when some may gain more than others from innovation and new projects, including the varying availability of emerging and alternative technologies required to achieve an equitable and sustainable energy transition (WEF, 2023).

People, organisations and societies can be at their most vulnerable when in a hurry. If urgent action is required and a proposed science or technology solution to an existential threat appears alluring, there may be a desire and public support for 'getting on with it'. Words of caution may be viewed as negative or a potential source of unwelcome and unnecessary delays while the cost of inaction increases. Yet technological developments that attract early-stage funding are not always as appropriate, affordable, justifiable and scalable as their promoters and supporters might believe and/or suggest, and alternatives, including those that work with nature, may be available (Arvai et al, 2024).

Leadership Challenges

Leaders at many levels face an unusually challenging combination of circumstances over which they can have little control, feel powerless and may be uncertain of what to do. Inter-related, inter-dependent and complex issues with difficult trade-offs can demand considered, rational and logical responses that may take time to formulate, rather than quicker instinctive and emotional reactions (Kahneman, 2011). Detailed programmes, logical explanations and rational assessment might seem cold and remote compared with the fast, off-the cuff and

more simplistic and empathetic actions of a populist. Leaders may be expected to be caring and to show empathy. Expectations of electorates and stakeholders who increasingly long for security, stability and support may exceed the ability of leaders to respond and deliver.

Threats can be real, imagined, distorted or magnified for various reasons. Due to the widespread media coverage of events such as terrorism and migration, people who are not directly affected may fear that in the future they could be existential threats. Their reactions can sometimes lead to polarised political responses with calls for more radical action. Some reactions can also be defensive. Faced with uncertainty, conflicting assessments, polarised perceptions and incompatible expectations leaders can sometimes feel exposed while seeking answers.

While hard to predict, catastrophes and disasters are not new. For some leaders, they come with the job. They have occurred throughout history and societies and their governing arrangements have often been ill prepared to cope with them (Ferguson, 2021). The context in which they occur, existing structures and institutions, and prevailing assumptions and practices, may help or hinder responses and ease or add to leadership challenges. Flexible rather than bureaucratic responses are often required. Have political and business leaders ensured that the right human resources and other capabilities are in place to prepare for existential threats? Are boards aware of corporate roles and responsibilities related to local, community or societal infrastructures that might be at risk in the event of a catastrophe?

Awareness of vulnerabilities, enablers and constraints and what is possible can shape assessments of leadership challenges. Many decision makers are not aware of the fragility of the conditions on earth that support our contemporary connected societies and collective civilisations and the narrow range of variability within which they remain viable (Mann, 2023). They may also under or over-estimate possibilities and future prospects (Rees, 2018). Future impacts are often so heavily discounted that they fail to influence contemporary decisions as perhaps they should if significant loss of options and possibilities is to be prevented (Royal Society, 2023). Some governments devote insufficient attention to threats to digital infrastructure, whether from solar flares or cable cutting by bad actors.

Arrangements that leaders inherit for dealing with various risks and threats can also reflect the perceptions of civil servants and others charged with preparing for them, and who may have limited, inadequate and/or unrealistic understanding of them. There is a danger that high impact, but low probability risks may not be considered a priority, leaving organisations, communities and countries struggling to cope with them when they arrive, while in the meantime effort is devoted to more likely risks that might be relatively easy to manage (Royal Society, 2023). Leaders wanting preparations to reflect likely impacts may face challenge from those seeking to park preparations that are considered to be 'too expensive', 'too hard' or 'unrealistic'.

Our world is unsettled, unsafe and replete with leadership dilemmas. Increased connectivity that delivers efficiencies may lead to dependency which can be exploited and lead to conflict (Leonard, 2021). Situations may rapidly change as threats evolve and new ones emerge. Various outcomes may be possible, some of which might be perceived or portrayed as unacceptable, probable at some point, or unstoppable. Yet our approach to the future has been

described as involving short-term thinking, polarizing debates, alarmist rhetoric and pessimism, with humanity's prospects dependent on our taking a very different approach to planning for tomorrow (Rees, 2018). As many aspects of the current situation and context are unprecedented, previous experience may not be relevant and could be misleading in relation to estimates of ability to cope and what now needs to be done. For example, past rates of recovery may not still apply. Are current arrangements 'fit for purpose'?

Operating in Dysfunctional Contexts

The contexts some leaders inherit and in which they operate, the aspirations and assumptions of bureaucracies they preside over, much of the advice they receive, and their own policies and priorities are either a cause or driver of certain existential threats or exacerbate them (Coulson-Thomas, 2024b; WEF, 2024b). They may be dysfunctional and counter-productive in varying ways and in differing degrees. In particular, because of negative impacts of human activities and corporate operations such as greenhouse gas emissions that cause global warming and climate change, economic growth needs to be sustainable. Living within our planets finite limits and the earth's eco-systems without detriment to future generations is not easy to achieve given a rising global population and consumer desires for 'ever more'?

Electorates and public finances may demand growth. More sustainable growth remains a global leadership challenge. The UN's 2023 Sustainable Development Goals (SDGs) report found that the impacts of the climate crisis, the war in Ukraine, a fragile global economy, and the lingering effects of the COVID-19 pandemic have revealed weaknesses and hindered progress towards the SDGs (United Nations, 2023). The report further warns that while lack of progress is universal, it is the world's poorest and most vulnerable who are experiencing the worst effects of these unprecedented global challenges. Urgent action is needed to rescue the UN's SDGs and deliver meaningful progress for people and the planet by 2030 (WEF, 2024b). Yet contemporary aspirations and objectives, that prioritise perceived national and corporate interests over those of eco-systems and future needs may hinder rather than help.

The quality of growth can be more important than its quantity, and the World Economic Forum (WEF) has established four dimensions or criteria for evaluating its quality, namely innovativeness, inclusiveness, sustainability and resilience (WEF, 2024a). The WEF assessment is that the world economy is only roughly halfway towards the innovative, inclusive, sustainable and resilient growth it considers desirable and necessary (WEF, 2024a). As technological and other developments occur, growth models and trajectories should be capable of absorbing them and evolving in response to them. Policy and actions to reduce vulnerability to existential threats may need to be given a higher priority in resilience plans.

Growth also needs to be inclusive and resilient if all stakeholders are to participate in the opportunities it creates. These could include contributions to preparing for existential threats such as climate adaptation and mitigation opportunities. In the past, growth has sometimes yielded initial and significant benefits for a favoured few at the expense of negative impacts upon many others (Acemoglu and Johnson, 2023). Resilience is the ability to cope with adversity and recover from shocks, ideally bouncing forward rather than just back as a situation and context may have moved on (Coulson-Thomas, 2023b). Achieving sustainable,

inclusive and resilient growth may require fundamental shifts of policy and priorities and is likely to encounter still opposition. Few leaders may have the courage to do what is required.

In the case of climate change much more needs to be done, and quickly as evidence of the impacts of global warming and the urgency of action continue to accumulate (UNEP, 2023; UNFCCC, 2023; NOAA, 2024; WEFc, 2024; WMO, 2024). Currently a minute proportion of the world's resources are devoted to assessing existential risks and preparing for them (Ord, 2020). Options for dealing with certain very low probability risks with potentially catastrophic consequences, such as a colliding asteroid have been considered and initial preparatory steps undertaken. Others have been more elusive, and cooperative institutional mechanisms and practical collaborations that embrace relevant areas of scientific expertise and decision makers have been difficult to agree and sometimes challenging to fund. The context in which leaders face existential threats is likely to remain dysfunctional.

Leadership Responses to Existential Threats

The responses of political leaders to different existential threats, awareness of them and the significance attached to them can reflect the attention that is given to them by electorates, officials, vested interests and the media, and leaders' own availability and focus in the hectic lives they often lead with many distractions (Sanger, 2024). The behaviour of busy directors in the boardroom may also be less rational than many might expect, and their responses can be subjective and affected by biases and the influence, power and authority wielded by others (Gopalakrishnan and Jayakumar, 2023). It could be different. Boards could allocate time, finance and other resources to identifying, assessing and coping with potential existential threats, and put the case for recognising, understanding and preparing for them (Ord, 2020).

Responsible leaders could consider how budgets and resources they control and/or influence could be used to encourage, incentivise, fund or otherwise support action to prepare for and cope with existential threats. For example, further research could be undertaken into possible or likely future applications and capabilities of AI and other technologies, and the risks and/or threats they might pose (DSIT, 2023). The prospects of humanity are linked, if not bound, to the future of science and hinges on how successfully we harness technological advances to address our challenges. If we are to use science to solve our problems while avoiding its dystopian risks, it has been suggested that we should think rationally, globally, collectively, and optimistically about the long term (Rees, 2018). Is it the role of leaders to offer hope, energise and inspire others to behave and innovate more responsibly (Medhat, 2023)?

If the dangers of certain technologies result from how they have been conceived, designed and constructed, could they be required to be developed differently and with existential threats in mind? For example, given the economic drive to continue to innovate, one response could be to leave the objectives of an AI application unclear until it has learned enough about human values and collective preferences to restrain from causing us harm (Russell, 2019). A positive view, that may overlook vested interests, natural capital and other resource constraints, and the malevolence of bad actors, is that advances in fields such as AI, biotechnology, cybertechnology and robotics, if pursued and applied wisely, could benefit both the developing and developed world, and even overcome existential threats from climate

change to nuclear war (Rees, 2018). How could leaders enable this? What policies might enable the safer and more responsible development of science and technology?

Much needs to happen for a leadership aspiration and/or vision to become a reality. Much faith is being placed in technology visions that may not deliver. Gladstone (2024) has developed an action plan based upon analyses of non-proliferation regimes for previous emerging technologies, AI developments, and potential future advanced AI research and development trajectories. Certain technologies pose a dilemma, in that their use against one existential threat may exacerbate another, confidence in them can distract, and reliance upon them can delay the grasping of nettles. For example, while advances in space science might allow humans to explore the solar system and beyond with robots and AI, in the absence of a viable alternative within reach we need to safeguard our home planet (Rees, 2018).

Leadership Limitations and Reliance upon Others

Leaders facing a combination of challenges, risks and existential threats, caused in varying degrees by human activities, may be both pessimistic about the future and unsure of what to do in response. Leaders encountered are often aware of the limitations of their offices, and how progress is often dependent upon a fortuitous combination of circumstances and inputs from others at a moment in time. 45% of 4,702 CEOs participating in PwC's 27th Annual Global CEO Survey believed their company would not be viable in ten years if it stayed on its current path (PwC, 2024). Perhaps more disturbing is that so many CEOs believed their company would remain viable without a change of direction and steps to reinvent their business models. Often, they are surrounded by, and receiving inputs from, those who have most to gain from continuing as before. They may also be dependent upon them for the implementation of policies and strategies.

In contrast, while surrounded by many advocates and beneficiaries of current policies, many leaders may meet far fewer of those who are concerned about their negative externalities, informed and worried about existential threats, and advocating change. Their desire to 'keep in' with certain lobbies and interests they may feel dependent upon for financial and other support, may inhibit them from changing direction or environmentally harmful policies such as fossil fuel subsidies that might exacerbate an external threat. Globally, these were \$7 trillion in 2022 or 7.1% of GDP (Black et al, 2023). Full fossil fuel price reform might reduce global CO₂ emissions to an estimated 43% below baseline levels in 2030 (in line with keeping global warming to 1.5-2°C), while raising revenues worth 3.6% of global GDP and preventing 1.6 million local air pollution deaths per year (Black et al, 2023).

To what extent will government, business and other leaders have the courage to accelerate progress towards Net Zero and confront an existential challenge such as global warming and climate change? The UN Environment Programme has not considered net-zero pledges to be credible (UNEP, 2023). Last year it found that none of the G20 countries were reducing emissions at a pace consistent with their net-zero targets, and even in the most optimistic scenario, the likelihood of limiting warming to 1.5°C was only 14% (UNEP, 2023). Will the values espoused by advocates of change, such as responsibility for the environment and future generations trump the determined lobbies of vested interests? Addressing climate

change and other existential threats may require responsible rather than values-based leadership (Coulson-Thomas, 2022). Global cooperation and collaboration is required.

A challenge for political and business decision makers in a divided and fracturing world is to identify and understand where and how competition and confrontation can coexist with cooperation (WEF, 2024b). It is only by aggregating and pooling resources, that sufficient capabilities might be assembled to address existential threats. The scale of what is needed will also require the more efficient and productive use of resources. Prior to the Covid-19 global pandemic, in advanced economies labour productivity had been falling since the late 1990s and following the 2007-2009 global financial crisis emerging and developing economies experienced a sharp fall in labour productivity (Dieppe and Kose, 2020). Recovery from the pandemic has been varied and challenging. Policy measures have ideally needed to reflect contextual factors and be targeted.

International Coordination of Collective Responses

Enhanced cooperation and collaboration is especially needed at the international level where collective and global responses are needed to global risks and common existential threats (WEF, 2024c & d). This may need to be matched with improvements in international and existential threat governance. International bodies, institutions and networks with state and/or non-state memberships exist in a variety of forms. They vary in effectiveness and impact. Leaders may be involved in decisions concerning their membership, prioritisation and representation. Existing governance arrangements have been unable to prevent certain challenges to international order and contraventions of the UN Charter, such as Russia's illegal and unprovoked invasion of Ukraine. What form of integrated governance framework might strengthen multi-lateral governance mechanisms to prevent and reduce risks and address existential threats, including global warming and climate change (Nurse, 2023)?

Progress has been made in certain arenas at the level of aspirations, preparing the ground and early scoping of what collective action is required. For example, following the COVID-19 pandemic, the World Health Authority responsible for the World Health Organisation agreed in December of 2021 to initiate discussions on a new international agreement to cover cooperation and responses to future pandemics. The effectiveness of what emerges is likely to depend upon arrangements for independent monitoring and compliance (Hannon et al, 2024). The communique of the 287 meeting of the IEA governing board at Ministerial level follows pledges to the strengthen energy security and accelerate green transitions to bring average global temperatures back below the Paris limit of 1.52°C above the pre-industrial average level (IEA, 2024). Implementation in such cases is often left to the individual members.

Ambition and achievement usually depend upon collective agreement and member actions, initiatives and policies respectively. The WEF in collaboration with McKinsey has produced a barometer with 52 indicators for measuring the extent of global cooperation in trade and capital flows, innovation and technology, climate and natural capital, health and wellness, and peace and security (WEF, 2024b). A variety of networks also exist to bring organisations together to share experiences of how to address certain challenges, for example the achievement of UN SDGs (UNGC, 2024). There are also various international organisations and networks covering particular

business, industrial voluntary, educational and other sectors, individual professions and trades unions. Those attending such meetings are often at executive level and follow official policies.

International Existential Threat Participation

What priorities are and should responsible leaders put upon the role of various international organisations and gatherings such as Conferences of the Parties (COPs) to address areas like climate change and biodiversity and their national and/or corporate contributions to them? For example, the global UN stocktake of efforts of countries to reduce global-warming emissions following the 2015 Paris Agreement that was undertaken ahead of COP 28 in Dubai, UAE concluded that radical decarbonisation with fast phase-out of fossil fuels without carbon capture was required and deforestation was needed to be stopped and reversed by 2030 (UNFCCC, 2023). What progress has been made in the call for a transition away from fossil fuels and other outcomes from COP 28? Leaders face decisions on what more needs to be done and what their national or corporate priorities should be for COP 29.

Leaders with impact ambitions can initiate or support action in relevant international forums. The steps that some organisations could take might be especially relevant for addressing some existential threats. For example, Member States of the International Maritime Organisation (IMO) at a meeting of the Marine Environment Protection Committee have adopted a revised strategy to reduce greenhouse gas (GHG) emissions from international shipping (IMO, 2023). The strategy aims to ensure an uptake of alternative zero and near-zero GHG fuels by 2030, establish indicative checkpoints for 2030 and 2040, and reach net-zero GHG emissions from international shipping close to 2050. Are similar but more demanding strategies required for other sectors that do not yet have them? Are all such strategies across different international organisations aligned and consistent.

Just as a chain is only as strong as its weakest link, regardless of resources and the quality of individuals deployed, a system of governance and how it is used can introduce vulnerabilities. Bureaucratic practices and inflexible arrangements can inhibit early, flexible and locally empowered and responsible responses at the early stages of an existential threat such as a pandemic. A variety of early decisions, because of contextual factors in Wuhan and the Chinese system of bureaucracy and control, missed opportunities to contain the initial Covid-19 outbreak (Yang, 2024). Their nature and number suggest that a wider pandemic was not inevitable. Opportunities to influence can be missed when environment scanning and monitoring fails to pick up wider and external developments due to a narrow perspective.

Within countries, failure to adequately prepare for existential threats and effectively cope with them may widen economic, social and other divisions between those who are privileged and those who are vulnerable and disadvantaged. Across countries and internationally, contingent upon dependencies, vulnerabilities and geographical and geopolitical factors, certain existential threats may impact some countries more than others. This may affect relative rankings on some dimensions. How long these changes last will depend upon relative resilience and recovery capabilities. Regional international organisations such as the EU and ASEAN may have a role to play in coordinating and implementing regional responses to a

particular existential (Nguyen, et al, 2022). A leader's perspective should be appropriate to his or her role, as should the perspectives of those who provide advice, counsel and support.

Existential Threat Crisis Leadership

Prior to the emergence of the Covid-19 pandemic when one category of existential threat became a reality, there were those who considered global governance, public leadership and board and corporate leadership to be in crisis, with new collaborations required for innovation in the delivery of services and collective responses, along with leadership for effective governance and ensuring that institutional changes serve the public interest (Boin, 2005; Gill, 2012; Liddle and Diamond, 2014; Coulson-Thomas, 2019). Multiple layers of leadership and governance arrangements already faced challenges in handling various risks that had the potential to either occasionally or periodically crystallise as crises.

In addition to tackling challenges involving common responsibilities, individual leaders can face geopolitical and/or military crises with the potential to become existential, in addition to periodic economic and/or political ones (Kennedy, 1968; Allison, 1971; Nizamidou, 2023). Some lessons may be learned from their experiences. However, a challenge with existential threats is that they are often evolving, emerging and looming and can arise in many forms and impact differently, according to location and context. The responsibilities of different levels of leadership relating to them, expectations of leaders, the individual and collective responses required, and their feasibility, practicality and affordability can also vary greatly. Political leaders may face calls to apportion blame as a crisis unfolds when the focus should be upon coping, responding and identifying and addressing root causes (Mark, 2024).

One conclusion from the Covid-19 crisis is that the requirement may be for a competent contextual and situational form of leadership that is appropriate, relevant and supportive in the circumstances, rather than one which is consciously and/or noticeably inspirational (Coulson-Thomas, 2019). Persuasion skills may play a role in the early stages of a pandemic (Seargeant, 2023). However, for those involved in responding and coping who are inwardly directed, whether or not leadership is authentic or inspirational may be less important than whether it is contextual and regarded as effective, timely, responsible and proportionate, messages from leaders are clear and unambiguous, and their decisions are thought to be balanced and fair and to reflect evidence and scientific advice (Coulson-Thomas, 2019).

During an extreme crisis, as an existential threat materialises and unfolds it may compromise the ability of public bodies and individual governments to respond and cope, and the support of the non-profit and voluntary sectors and regional and international organisations may be required (Nguyen, et al, 2022; Rosenbusch et al, 2024). Leaders of cooperating and collaborating parties need to obtain reliable information, balance service delivery and stakeholder safety, communicate with stakeholders, accept an evolving new normal and together adopt creative solutions (Rosenbusch et al, 2024). Existential threats can impact people, organisations, communities and societies with very different values and perspectives. Given a common desire to cope and survive, a responsible form of leadership with contextual application that advances shared interests may be appropriate (Coulson-Thomas, 2021).

Future Existential Threat Leadership

There are steps that directors and boards can take to prepare for certain categories of existential threat and better cope with them (Coulson-Thomas, 2024). Contingency arrangements and processes for addressing different existential threats are often in varying states of readiness. Budget limitations may require the prioritisation of which of them need to be updated and which communication and collaboration networks require testing. Leaders may need to be psychologically resilient to remain in office (Fletcher and Sarkar, 2013). In difficult circumstances as well as being realistic, leaders may have to give more attention to inspiring others and being a positive role model for those who are endeavouring to cope with changed and/or rapidly evolving situations and circumstances (Coulson-Thomas, 2021). This can require pragmatism, concentration and focus, and moral and physical courage.

Future existential threat leadership requires being ready for the unexpected and able to quickly rise to the occasion in the face of a 'black swan' event (Taleb, 2010; Clampitt and DeKoch, 2015). The tenure of a leader can be short, especially in competitive contexts and democracies. Position power may diminish overnight. Thereafter memories can quickly fade, and opportunities and invitations might dry up. Lobbyists, adventurers, and those with advice to give, or services and technologies to sell, will pursue someone else. The day after, it might be too late to have an impact. In the case of existential threats, using a role to exert thought leadership and being an educator, advocate, and champion to increase awareness, understanding and support of what needs to be done in response to them, and using any power of patronage to advance likeminded allies might be a route to more enduring impact.

Listening leadership is desirable, if advice, briefings, evidence, reports, and other inputs received by decision makers are relevant, accurate, current and objective (Coulson-Thomas, 2014). A leader may have little or very limited knowledge and/or experience of an existential threat before it is encountered, and it may emerge in varying forms in different places. Knowing whom to consult, listen to and trust can be critical. Leaders need to be able to detect those who tell them what they believe they might want to hear and/or what serves a vested interest rather than the common good. Critical thinking and a degree of scepticism are essential for responsible leadership (Coulson-Thomas, 2022a). Those who stray beyond the limits of their competence and are not aware of their limitations, or ready to acknowledge them and seek other opinions, can be extremely dangerous.

Future democratic leaders should be unifiers who bring people together across generational and other divides (Duffy, 2021; Coulson-Thomas, 2023a). Whether local, national or international, from a public, commercial or voluntary sector, where activities and responsibilities are at risk from existential threats, capabilities and resources they can control or influence could be used to prepare for them, become less vulnerable and more resilient, confront or respond to them, and cope with their consequences. Being prepared includes knowing from where, when and whom to obtain relevant, current and objective advice, counsel and support. Leaders should seek to understand and address what distinguishes existential threats, is distinctive about different threats and their possible impacts, and what is required to respond to them and cope with them, as, where and when they arise.

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Abstract

An unprecedented combination of various categories of inter-related global risks and existential threats represent a profound challenge for political, business and other leaders. Those who advise and support leaders may have limited understanding of them, while existing arrangements and institutions for addressing them are often inadequate, Scientific, business, political and media views may vary on whether a threat is potentially existential, according to differing perspectives and considerations such as existential for whom, where and when, and possibilities for response and recovery. Many existential threats are the result of human activities. Effective responses to them require cooperation and collective action. While common interest in survival may encourage consensus on aims, subsequent commitments to act can vary. Vested interests and defensive lobbies abound. Balanced and objective advice, and attention, budgets and preparations for high impact but low probability threats may be difficult to obtain. Leaders should be collaborative unifiers who can quickly step up and bring people together. They should act as educators, advocates, and champions when required for collective understanding of existential threats and their possible impacts, and what is required to respond to them and cope with them, as and where they arise.

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