MUSLIM SOCIETIES IN POSTNORMAL TIMES

Foresight for Trends, Emerging Issues and Scenarios

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FOREWORD

Just before his death in March 2018, the celebrated British physicist Stephen Hawking declared that humanity was entering 'an increasing dangerous period of our history'. He was concerned about the possible perilous outcomes of super smart artificial intelligence (AI). What could happen, Hawking asked, if AI transcends our own intelligence, and machines proceed to improve themselves at an exponential rate? What will become of us then? But AI is not the only threat facing humankind. Climate change is leading to rising sea levels and oceans are becoming warmer. Global warming could make many cities inhabitable; and the very diversity of our planet is seriously at risk. The overuse of antibiotics has led to the rise of antibiotic resistant bacteria. The World Health Organisation (WHO) has declared antibiotic resistance as a major threat to public health worldwide.

These and many other recent developments raise a number of rudimentary questions. What kind of future are we shaping for ourselves and our planet? What risks and dangers lurk over the horizon – in the near and not do distant future? Do we have a sense of direction? And what kind of society and world do we wish to live in as well as leave behind, for ourselves, for our children, and future generations? What can we, as Muslims, do to shape a more viable future both for Muslim societies and the world at large? These questions require our urgent attention.

The actions and decision we take today have profound consequences for the future. Even a simple individual act, such as using a plastic bag, can have an impact, and on a global scale can create a major footprint for tomorrow. The invention of plastics, a marvel in its day, a miracle substance with endless possibilities, has now become an environmental and ecological disaster. Plastic, a material that can be shaped into almost any form for use by humankind, has inadvertently shaped an undesirable outcome for the environment and a fragile ecology, adversely affecting many marine species, which in turn contaminate the food chain on which humans depend. If we are to avoid a similar scenario in the future, perhaps with some other substance, industrial process or emerging technology, then we need to learn lessons from the past, and take appropriate steps in the present, to better shape a desirable outcome for the next generations of humanity.

It is therefore essential for us, as individuals, communities and nations, to develop a sense of direction: an awareness of where we are heading, alertness to the potential consequences of our current activities and choices, and an understanding of the global cost of

our individual and collective decisions. This, in turn, requires us to have a modicum of appreciation of how the future unfolds, and the accelerating changes that are hurtling us towards undesirable prospects. In short, all of us have to become futures literate.

UNESCO defines futures literacy as a 'capability that offers insight into both the reason and the methods humans employ when they anticipate'; it is a 'skill that allows people to better understand the role the future plays in what they see and do'. When thinking about and exploring the future we need to appreciate that there is not one but many alternative futures. That 'the future' is not a priori given: it can be imagined, it can be shaped; and individuals and communities have the agency both to imagine different futures for different reasons, values, and worldviews, and to foresee and usher them.

When thinking and working with alternative futures, it is important not to be trapped in Orwellian type scenarios, which has been the fashion of decades past and have been popularised by films such as The Terminator, Blade Runner and other similar outputs from Hollywood. Or to be carried away with 'gee whizz' champions of emerging technologies who think all our problems will be solved through AI and machine learning; and who long for 'singularity' when humans and computers merge to become a single unit! Rather, we need to use our imagination and futures skills to imagine genuine alternatives based on our own values and concern – to generate hope, to motivate ourselves and others to change, and invest in viable, desirable, thriving and prosperous futures. While others may debate the complexity and desirability of colonising Mars, or perfecting the human self in artificial intelligence, we need to focus on more 'ancient' questions of increasing human suffering, war, and poverty, which still remain unsolved, and in fact become more potent given the scale of inequality and injustice that now shroud the globe.

Indeed, issues of social justice, income disparity, unemployment, environment, technological and cultural disruption are perhaps more acute and urgent in the Muslim world than elsewhere. This is the central message of Muslim Societies in Postnormal Times, the second book in the IIIT series on Futures. Sardar, Serra and Jordan show it is necessary for Muslims to pay urgent attention to such issues as populations and pollution, environment and liveability, migration and refugees, economy and energy, health and wellbeing, as well as Islamophobia and the rise of fascism, social media and AI, ignorance and uncertainty and anxiety and weirdness. Whether we think in terms of our own personal future, or those of our children, families, communities, societies, or our own countries, or reflect on wider global issues, what is clear is that there is a sense of urgency – our actions and inactions, choices and decisions, are not only endangering our futures but also threaten the very abode of our terrestrial journey – the Earth itself.

The book is divided into three parts: trends, emerging issues and scenarios. Trends show us how the world and factors within it change over time – global warming for example. An extrapolation of these factors – a projection of the future – shows us what we could expect to see in the future. The authors explore a wide range of global trends that will have direct and indirect impact on Muslim communities, as well as trends specific to Muslim societies. For each trend, potential future implications

for Muslim societies are suggested. While these trends paint a dire picture, the authors repeatedly point out that trends are not destiny – they can be thwarted, redirected and changed by our determined will and actions in the present, by sensible policies, and even by emerging issues – issues, events phenomena under the radar, not yet fully visible, with the potential to have a positive or negative effect—and, in some cases, a dramatic impact – on future developments. 'Emerging issues', the authors note, 'are raw material of futures studies. They may be thought of as embryonic, fragmented, incomplete, concealed, and inadvertent data that may appear irrelevant at first sight but could have considerable impact on shaping futures. They are harbingers of change but may not strike an interested observer as such. The raw data, or signal, can be refined into valuable information and placed in appropriate context to yield futures insight. Emerging issues often precede trends, and can be seen as advanced indicators of novel developments in the rate and directions of trends'. The repercussions of trends and emerging issues are further explored through a wide range of scenarios.

The exploration of Muslim futures in this study is framed by the Postnormal Times Theory pioneered by Sardar and his colleagues at the Centre for Postnormal Times and Futures Studies (CPPFS), and supported and encouraged by the IIIT. Put simply, Postnormal Times Theory suggests that we are living in a specific period that is characterised by complexity, chaos and contradictions. We live in a world where complexity is the dominant theme, where a plethora of independent parts interact with each other in a great many ways. Everything is connected to everything else in networks upon networks that generate positive feedback that amplify things in geometric proportions leading to chaos. Accelerating change makes things even more complex and chaotic. We thus end up with many positions that are logically inconsistent and contradictory. In postnormal times, things we take for granted become uncertain, our understanding of things can become a form of ignorance, and longstanding norms, if not the very idea of normalcy itself, break down before our very eyes. Thus, many well established ideas, issues and things, such as capitalism and free markets, democracy and accountability, security and climate, food and water, energy as well as the notions of efficiency and perpetual linear progress, cannot be taken for granted.

The emerging issues in this study are framed around the Menagerie of Postnormal Potentialities, a scheme to spot novelty, incipient change and anticipate alternative futures. The emerging issues are thus presented as Black Elephants, Black Swans and Black Jellyfish. Black Elephants are events that are widely forecast and could have a high impact but are generally ignored. Black Swans are outlier phenomena, neither perceived or anticipated – fundamentally unknown unknowns – that could be perceived both as future threats as well as opportunities. Finally, Black Jellyfish are 'normal' phenomena that we think we know but with the potential of unexpected and unforeseen behaviour that could have a major impact on the future – leading to chaos. As the authors point out, each of the emerging issues represents a complex ecology of various things; clustering them within the Menagerie helps us to see the interconnections and focuses our attention on profound changes lurking over the horizon.

Emerging issues and trends provide the bedrock for the scenarios in this book. However, as the emphasis is on the complex, networked, dynamic nature of postnormal times, the scenarios are explored through the Three Tomorrows structure, a system that emphasises the simultaneous and reiterative nature of change and helps us understand how future images are shaped within particular contexts. Extended present is the predominant image of the future; it is based simply on extrapolation of the current trends, and deeply rooted in linearity. Familiar futures are images and scenarios mediated by ubiquitous images of the future we find in media, films, television, advertising, science fiction and social media. They are usually a combination of projections and imagination. The unthought futures are outside the framework of conventional thought, they are not unthinkable but require us to abandon linearity and other implicit assumptions in our outlooks, ideologies, and worldviews. Each tomorrow is framed within a set of specific questions that arise from trends and emerging issues and thus shapes the narratives of the scenarios. These scenarios, the authors emphasise, are not forecasts let alone predictions; rather, they are tools for imaginative exploration of alternative futures: 'they should be seen as the beginning of a long overdue discussion on Muslim Futures'.

For much of recent history, the future has been conspicuously absent from Muslim thought and discourses as though the basic assumptions of Islam do not permit reflections and considerations of alternative futures. This is somewhat ironic given that Islam is perforce a future orientated worldview. The Qur'an specifically asks the believers to be conscious of their history as well as their future: 'Beware of what lies before and behind you, so that you may be given mercy' (36:45).

And, in a much quoted beautiful hadith, the Prophet adds: 'Trust in Allah but tie your camel'. Exploring alternative futures generates an awareness of what lies before us. Working with the future, becoming futures literate, is the best way to tie the proverbial camel: it not only enables us to make appropriate decisions in the present, but also expands our horizons on what we can see and how our actions, choices and beliefs are shaping the future. Islam teaches us not only to be compassionate, just and mindful but also to invest in our futures – both here and in the Hereafter. Good deeds, hard work, diligent efforts and future consciousness are a constant benefit for us as individuals and families as well as communities and societies.

Muslim Societies in Postnormal Times is an invitation to Muslims everywhere to reflect on their futures. The book asks us to contemplate the threats and challenges that lay before us, and to ponder the deeds we are sending forward for generations to come. To imagine alternatives rooted in our values, traditions and history. And to work towards shaping viable and thriving futures not just for our own communities but for the betterment of all humanity.

We hope that readers will find this book insightful and enlightening – both a warning of the dangers ahead but also a source of inspiration and a hope for the future.

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OVERVIEW

Why worry about the future? Today's concerns are, after all, urgent and need all our attention. Given the pace of rapid change, the future is so unpredictable that it is hardly worth putting any effort to 'predict' *the* future. There are no 'facts' about *the* future we can use. And, even if one could predict *the* future, could one do anything about it?

Prediction is a mug's game; and, strictly speaking, there is no such thing as *the* future. There are a host of potential and possible alternative futures. The point of thinking about futures is not so much to 'predict' the future but to understand how change unfolds, what hazards and opportunities may lurk over the horizon, and how can we negotiate pitfalls and harness opportunities. A compelling reason for studying and exploring the future – that is, acquiring futures literacy and developing futures consciousness – is that the very fact of our awareness of how change could unfold changes the parameters of a changing world. It makes us aware of what we ought to be doing now, in the present, so that we may shape a future that we desire: "a futures literate person", suggests the UNESCO study *Transforming the Future*, "has acquired the skills needed to decide why and how to use their imagination to introduce the non-existent future into the present". Moreover, if we do not think about our own futures, others will. In other words, our futures will be colonised: it will be little more than the transformation of society by existing and emerging technologies, by organisations that can harness data on an epic scale, by the deterministic vision of billionaires, and by the dominant trends of a post-truth world.

There is also a strong imperative for Muslims to reflect on futures. As a system of thought and action, Islam is inevitably a future-orientated world-view: it is concerned with improving both this world and the Hereafter. It is thus not surprising that the basic concepts of Islam have an intrinsic futures dimension. Consider, for example, the concepts of *tawhid*, *khilafah* and *akhirah*. *Tawhid*, according to Ismail al Faruqi, is not just the essence of religious experience but also the principle of knowledge, social order and aesthetics. If you are working to enhance unity and beauty – that is operationalise *tawhid* – in the world you are naturally engaged in a future oriented activity: you are actually working towards developing a better future that you desire. The concepts of *khilafah* (the trusteeship of man) and *akhirah* (accountability on the Day of Judgement), force Muslims to think about their individual and collective futures. As trustees of God, the believers are duty bound to look after and enhance the trust – the abode

of their terrestrial journey, the planet Earth, which according to the Prophet Muhammad is 'green and beautiful'. And this is a responsibility for perpetuity: each generation has to ensure that the trust remains 'green and beautiful' for the next generation. *Akhirah*, or the Hereafter, which incorporates the notions of 'life after death' as well as accountability and judgement, is all about shaping the future: the Hereafter is shaped on the earth. You are not making a contribution to shaping your Hereafter if you undermine futures of your communities, of generations to come, and of the planet itself. Thus the concept of *akhirah* should make Muslims aware of their long-term future; and true believers should always be striving to shape viable futures both for their communities and humanity as a whole.

A number of verses in the Qur'an also force our gaze towards the future; here, a couple of examples should suffice. "God does not change the condition of a people unless they change what is in themselves" (13:11), which not only suggests that change begins with oneself but also that the 'condition' one is trying to change cannot be changed instantly; it can only change over a period of time with much reflection and effort. If we read this verse in conjunction with 53: 39-41, "Man will only have what he has worked towards, that this labour will be seen, and that in the end his labour will be repaid in full", we can see an underlying dynamic being unfolded. Change begins with labour in the present shaping the outcome in the future – the location where it is fully realised and rewarded. We are being encouraged to reflect on and understand change – 'one of the mightiest things', like the phases of 'the moon', 'the departing night', 'the shining dawn', a forewarning to 'those of you who choose to go ahead and those who lag behind' (74: 32-37).

The life of the Prophet too has many future oriented lessons. Consider, for example, the detailed futures planning that went into the *hijra*: the migration of the Prophet from Makkah to Madinah. The transfer of various Muslims families to Madinah was planned way in advance and occurred over a number of months. The escape route of the Prophet and his companion, Abu Bakr, was planned to the minutest detail, even to the extent of creating false leads for the pursuing party. Ponder the level of strategic planning that went in the Battle of Badr: the Prophet defended Madinah not within the boundaries of the city but went over a hundred kilometres outside to Badr, secured a watering hole, rested his troops, and then waited for the tired and exhausted enemy to arrive. Reflect on the Prophet's first act at arriving in Madinah: he established the Constitution of Madinah which became a blueprint for the new and future community he sought to establish. And the ultimate futures lesson of the 23-years of his Prophethood: a society can be radically changed within a generation. And a desert culture can become a global civilisation within a few generations! The fourteenth century Muslim historian, Ibn Khaldun, showed just how such change is engendered in his theory of the rise and fall of civilisations.

Al-Ghazali, the great eleventh century Muslim theologian and philosopher, divided knowledge into two broad categories: *fard ayn*, knowledge that is necessary for all Muslims; and *fard kifaya*, socially requisite knowledge which must be acquired by some

members of the community or the whole community will suffer. He suggests that medicine, mathematics, agriculture, weaving and even tailoring are *fard kifaya*. A community that lacks such knowledge 'exposes itself to destruction'. Futures studies, we would argue, is *fard kifaya*: it is essential for a segment of any Muslim community to reflect on, study and explore its potential and possible futures. Like medicine, law or engineering, futures studies are a prerequisite for the survival of Muslim societies; and an indispensable tool for envisioning, navigating and shaping viable and preferable futures.

Exploration of futures is not totally alien to Muslim culture. In *On The Perfect State*, the tenth century philosopher al-Farabi, known after Plato as the 'Second Master', imagined a future utopia where society functioned in perfect harmony much like a healthy human body. A century later, Ibn Tufayl wrote *Hayy ibn Yaqzan* in which the protagonist is created spontaneously in a desert island and comes to understand the world through observation and deduction. *Hayy* offers a utopian scenario of a rational society.

However, futures studies itself has yet to make its presence felt in Muslim communities. While history is an essential part of the curriculum, the future – where the rest of the lives of the students will be spent – is taught neither at school or university levels. Not surprisingly, there is little or no awareness of futures studies in Muslim academic circles or amongst decision makers. The origins of this book lay in the simple observation that there is a noticeable lack of material on Muslim futures; and our feeling, as futurists, that Muslim societies need to give urgent attention to exploring and working towards developing and shaping a better and more beneficial future. As part of the IIIT project 'Advancing Education in Muslim Societies' (AEMS), this book is designed to provide a practical and realistic guide to exploring alternative futures of Muslim societies for students, academics and policy makers. We have used three well established methods of futures studies: analysis of prominent trends, examination of emerging issues (what is barely discernible in the present but could become significant in the future), and building scenarios based on identified trends and emerging issues. Scenarios expose future assumptions that would otherwise remain implicit. The book is thus divided into three parts, each devoted to a particular way of studying futures, and each with its own explanatory introduction. The data used in our trend analysis is from a number of different sources – the most reliable we could find – and the readers and users of this textbook should bear the source of the data in mind as it could have a particular bias, and critically evaluate the information presented. Moreover, data can go out of date relatively quickly. And today's emerging issues may become tomorrows established trends, requiring new scenarios. The World that we live in is constantly changing, and hence so is the future. It is thus our intention to update and revise this book and publish new editions at regular intervals.

This study is specifically focussed on Muslim people and their societies. But how does one describe around a quarter of humanity that subscribes to the worldview of Islam? There is, of course, the Islamic concept of the *ummah* – the global Muslim community. However, the ummah represents much more

than a community: it is a moral concept that suggests that Muslims *ought* to be a community not just in relation to each other but also in relation to other communities and the natural world. Two problems arise when we freely use the concepts of the ummah. First, there is the assumption that the ummah is a monolithic entity dominated by a single outlook or interpretation of Islam. Second, as Anwar Ibrahim laments, "in the contemporary world the *ummah* is certainly not an authentic representation of its history and heritage". Ibrahim goes on to say: "today, the Muslim world which so superficially absorbs and is so deeply affected by the dominant world order has in several respects become an insular society, full of contradictions and dichotomies. Conscious of its identity, only to find itself aggrieved, the Muslim world has bred a sense of exclusivity that denies the openness that is the authentic meaning of ummah". Till such time, that Muslims embrace openness and express unity in diversity as lived reality, the notion of the ummah will remain an ideal.

However, even the term 'Muslim world' is not without its problems. As Cemil Aydin has shown so brilliantly in his *The Idea of the Muslim World*, it is also a "naïve categorisation". As Aydin shows, Muslim world does not derive from the concept of the ummah. Indeed, Muslims never perceived global political unity until the 1870s when the term 'Muslim' became a racial category through various Orientalist and Islamophobic works. As such, Aydin argues, the notion of the Muslim world is intrinsically linked to the claim that Muslims constitute a race. Both the notion of ummah and the idea of the Muslim world has been used by violent extremists such as al-Qaida and ISIS as well as Islamophobes in the West to promote their nefarious agendas. As Aydin notes:

> Some of today's transnational Islamist political projects and identities claim to challenge Westphalian national borders in the name of the borderless Muslim world. But this narrative of the encounter between the modern West and the Islamic world is ahistorical and relies on myths of what constitutes the West and the Muslim world. In reality, before and during the colonial period Muslims' political views could be as imperial as Queen Victoria's, as nationalistic as Gandhi's, and as socialistic as Lenin's. In the age when imperialists and reformers were inventing unitary Islam, individual Muslims were anarchists, feminists, and pacifists. They were as modern as their European counterparts. Muslim political visions from the mid-nineteenth century onward, including pan-Islamism, reflect not enduring tradition but rather the particular entanglement of Muslim intellectual history and the shifting international order from the age of empires to that of the contemporary nation-state.

The 'Muslim world' also suggests that the Muslims are a world apart from the rest of humanity. It makes little sense in an interdependent, interconnected, globalised world, to talk about orderly divisions. Not only have the boundaries and dividing lines of 'Islam' and 'the West' become fuzzy, but global problems affect all of humanity, and an issue arising in Muslim or western societies can have a profound impact on both. Nowadays, there is as much Islam in the West as there

is the West in Muslim societies. Thus there is a need to move beyond the old, imagined categories. As Aydin argues, we need to decolonise our sense of certain terms for both the empowered and the disadvantaged to better examine Muslim identity and seek out global justice and order.

In this book, we have avoided the use of the term *ummah* and, where possible, the Muslim world. Instead, we have talked about 'Muslim societies' and 'Muslim communities', acknowledging their diversity and plurality, different historical backgrounds and contexts, and geographical spread – including in Europe and the USA. However, it has been necessary sometimes to resort to the category 'the Muslim world' to describe Muslim-majority countries as a collective. But our overall contention is that Muslims also exist in networks of communities within communities.

Networks have, of course, existed for centuries. Once upon a time, academic networks were known as 'invisible colleges'. But in a globalised world, where communication is instant and everything seems to be connected to everything else, the nature of networks has changed fundamentally. Indeed, change itself has changed drastically. Contemporary change has a very specific nature that we need to understand before we contemplate how to negotiate and navigate it. In this book, we have framed our analysis within a specific approach to studying and deciphering change that we describe as the Postnormal Times Theory (PNT for short). Postnormal times is defined as an 'in-between period where old orthodoxies are dying, new ones have yet to be born, and very few things seem to make sense'. In Postnormal times, much that we took for granted has either failed us, or is leading us towards a dangerous future, or becoming irrelevant, or is in its last gasp – modernity, postmodernity, predatory capitalism, market fundamentalism, hierarchical structures of society, institutions and organisations, top down politics, broken government, polluting industries, runaway technology, marginalisation of the vast swathes of humanity, xenophobia, racism and misogyny, unjust social and political policies, scientism, and much else that has shaped and defined the 'modern world'. In normal times, we have confidence in our facts and values and we can take our time in making correct and appropriate decisions. Problems and issues may be difficult or complicated, but they can always be solved and resolved by tried and trusted methods – by isolating and scrutinising them. But in Postnormal times, we do not have this luxury. Problems and issues are interconnected and intertwined and are subject to accelerating change. Complexity is dominant, and facts are uncertain (and not just because of 'fake news'). Man-made risks are at a dangerous level, safety is under threat, and uncertainty envelopes urgent decisions. In these circumstances, the conventional notions of control and management become problematic. Postnormal times describe the dynamics of our time; and attempts to identify the forces that are propelling us towards a particular direction – a potential, indeed given the trends, a probable future. It is important to note that not everything has become postnormal; but many things have and more and more are moving towards postnormality.

There are three forces that are driving us towards PNT. The first is Complexity. It is a property of certain systems distinguished from those which are simple or just

complicated. In simple systems, things tend to be deterministic and have a direct cause and effect relationship; they are easily knowable. A complicated system may require more variables to control and manage it; it is still knowable. Complex systems present us with a totally different phenomenon: they consist of interconnected and interdependent structures and patterns. There is no unique definition of complexity; different disciplines have their own specific delineations. But for us, complexity is characterised by a plethora of independent parts interacting with each other in a great many ways. Complex systems have two essential features: they have substantial uncertainties that cannot be managed as 'risks'; and they have multiplicity of legitimate perspectives. When a complex system consists of networks, in which independent parts are connected and interact with each other, it can generate positive feedback: a loop mechanism that amplifies things in geometric proportions. A complex, networked system is thus full of uncertainties and multiple perspectives and prone to turbulent behaviour. The second is Chaos; and we are using chaos here in the strict sense of Chaos theory. It is also worth appreciating that chaos does not imply randomness. Chaos is the outcome of a great many independent variables interacting in many different ways in a networked complex system. In a chaotic system, initial conditions and small perturbations can lead to colossal changes: this is the famous butterfly effect which suggests that a single flap of a wing could generate a tornado thousands of miles away. In a famous short story by Ray Bradbury, 'A Sound of Thunder', the death of a prehistoric butterfly changes the outcome of a present-day presidential election! Chaotic systems are neither knowable nor predictable; such systems have the ability to balance order and chaos. This balancing point is called the edge of chaos: it is where the system is in a kind of suspended animation between stability and total dissolution into turbulence. At the edge of chaos, a complex system can collapse or self-organise into a new order. The third is Contradictions. A complex system has many positions that are logically inconsistent; and a complex system at the edge of chaos is even more so. Contradictions, which by definition are opposing, irreconcilable views, cannot be resolved: they can only be transcended. In other words, contradictions have to be synthesised in a new position that incorporates most of the various different positions. These then are the 3Cs of Postnormal times. The change that is produced by the 3Cs has four particular features: Speed, Scope, Scale and Simultaneity. Postnormal change occurs at accelerating pace, at high speed. It tends to be global in scope and can penetrate deep, registering its impact at the minutest scale. And it is often simultaneous – a plethora of different problems and issues emerge concurrently and acquire a global dimension promptly. When 3Cs and 4Ss come together, there is – not surprisingly – a great deal of uncertainty. Uncertainty per se generates ignorance. In Postnormal times, uncertainty and ignorance shape the *zeitgeist*.

In conventional futures work, the future is roughly divided into near future, medium future and far future. While a useful tool in thinking futures, this division is too broad and too general. In the framework of Postnormal Times Theory, we think of alternative futures in terms of specific clusters of tomorrows. The first tomorrow is simply the Extended Present: that is to say, the trends

and developments we can identify today will shape the future of the next decade. This is not to say that the Extended Present cannot be affected by the turbulence of Postnormal times. But on the whole, change in the near future will be determined by deeply embedded current trends, the momentum of the present. Beyond extended present, which is what most people mean when they talk about 'the future', we have Familiar Futures of the second tomorrow. These futures seem familiar because they are mediated by images and imaginings from films and television shows, science fiction, advertising, corporate visions, and popular 'futurology' that are extrapolated and projected to create a picture of the future that is all too familiar. The desires for these futures are created and they become deeply embedded in our minds. This is where most futures work and research is concentrated. Finally, the Unthought Futures of the third tomorrow: the futures that are outside the structure of our current thinking, the futures we cannot imagine because our imagination fails us, the futures which forces us to re-examine the premises, assumptions and axioms of our thought, outlooks and worldviews. The three tomorrows could unfold in a linear way but as they are subject to the turbulence of Postnormal times – the second and third tomorrows more obviously so – they could also occur simultaneously: unfold in parallel or meshed and intertwined together. Postnormal phenomenon could thus unfold in all three tomorrows both linearly or concurrently. We have used the three tomorrows framework to build and locate our scenarios.

Can we detect the emergence of postnormality? To help us perceive and possibly identify events and issues that could go postnormal, and grasp their significance, we have developed a specific tool: the menagerie of postnormal potentialities. It consists of three metaphorical animals, each signifying a particularly type of phenomenon that could become postnormal: Black Elephants, Black Swans, and Black Jellyfish. Black Elephants are issues and events that have a high probability of occurrence as well as the potential of making a major impact but are generally overlooked or deliberately ignored. They are often connected to contradictions and have a strong bearing on the Extended Present. Black Swans are outliers, located way outside the norm – phenomenon neither perceived nor anticipated, which often come 'out of the blue'. Although they are generally perceived as a threat, Black Swans could also be opportunities, associated with Familiar Futures. Finally, Black Jellyfish are 'normal' phenomena with potential for high impact, driven towards postnormality by positive feedback, that we think we really know but which can unexpectedly exhibit unforeseen behaviour that could produce chaotic or catalytic outcome. Black Jellyfish are associated with chaos and Unthought Futures. The emerging issues we have identified are structured around the menagerie of postnormal potentialities. Some perception is naturally involved in deciding whether a particular emerging issue is a Black Elephant or a Black Swan, or indeed a Black Jellyfish. The designations here are a product of our discernment. Readers may see them differently. The idea is to think critically about the emerging issues and explore their potential futures impacts.

In Postnormal times, moral and ethical, and hence religious, concerns come to the

fore. Almost every advance in science and technology has second and third order side effects with issues of safety and profound ethical consequences. There are, for example, many cases of gene modification gone wrong. Fish that were modified to increase their growth turned out to die young and deformed. The genetically modified maize, Star Link, turned out to be an allergen. When researchers in Germany tried to reduce the sugar levels and increase the starch content in potatoes, using genes from yeast and a bacterium, starch levels were actually reduced. Many unexpected compounds were also produced as a result of disturbances to the potato's metabolism. Complex systems are riddled with deep uncertainties that cannot be tamed. Often the uncertainties go beyond science and technology and come in conflict with lifestyles, sustainability and ethical questions: climate change, genetic engineering, weaponised code, 3-D printed bodies, brain mapping are a few good examples. A host of trends and emerging social and cultural issues also have a moral dimension. The obvious examples are increasing inequality, the use and abuse of mega data by technology companies and the re-emergence of fascism in Europe and the US. But there are also such concerns as the emergence of environmental refugees, superbugs, and killer robots, as well as social disruption via virtual reality, the domination of everyday life by - sometimes unexpectedly racist - Artificial Intelligence (AI), the erasure of jobs by technology, and the general spread of 'weirdness'. Synthetic biologists are close to engineering living cells that can diagnose human disease and repair environmental damage; but researchers are also getting closer and closer to permanently altering the human genetic code. Indeed, Postnormal times is reshaping the very idea of what it means to be a human being.

New and emerging technologies also bring legal and theological issues and questions to the forefront. Should robots have civil rights? Already, Saudi Arabia has awarded rights to the android Sophia. If every aspect of our life is governed by AI, can it take over law itself? If Robots can imitate various aspects of human behaviour, would they also be able to profess faith and practice religion? The religious zeal of the champions of AI is worth noting. The 'predictions' of transhumanists who long for and work towards creating a world of cyborgs, and devotees of singularity – the point where AI surpasses human intelligence, predicted to be 2045 – such as Google futurist Ray Kurzeil, are couched in theological language. Indeed, the first AI Church has been established by Anthony Levandowski, the Silicon Valley multimillionaire who designed the self-driving car for Google and Uber. The Way of the Future Church, we are told, "is about creating a peaceful and respectful transition of who is in charge of the planet from people to people + machines".

If there is one thing that we have learned from over sixty years of futures studies, it is this: nothing is inevitable. Most things can be changed: we can proactively work towards contributing to a better future by our actions in the present - hence futures are inevitably linked to the present. But 'the future' is a contested domain where old and new religions, ideologies and perceptions of what the world ought to be and conceptions of what is humanity, are jostling for power; and all variety of efforts are underway to colonise it. Our futures, as Ashis Nandy, the celebrated

Indian public intellectual, has pointed out, are being stolen. The exploration of futures, he asserts, "have to be specifically statements of dissent from the existing ideas of normality, sanity and objectivity".

The headline for Andrew Chakhoyan's article for *World Economic Forum* sums up the current state of affairs: "We're moving fast. But nobody knows where we're going".

In such a postnormal world, Muslims cannot take a back seat. Muslim futures beckon. Not least to keep all our futures open and pluralistic and provide them with a viable sense of direction.

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Trends

INTRODUCTION

As the bedrock of futures studies, trends form the core of any serious futures research. By definition, a trend is fundamentally a measure of change, something that has perceivably shifted (typically but not always growth, which is usually what draws the most attention) over a given period of time within a particular context. At present, there is a great deal of attention on the trend of aging societies, at least in contexts where this is an issue, such as Europe and East Asia. Elsewhere, a very different trend has taken hold: a youth bulge unlike anything in recorded history. Pakistan alone currently has 60 million people under the age of 18 years old.

Aside from demographic shifts, we live in a time when seemingly anything at any given moment can become trendy, that is it can accelerate or diminish with reckless abandon. One need only look at the recent rise of everything from fidget spinners to Bitcoin to see that there need not be any rhyme or reason to the nature of what is and is not trendy. Regardless of scale, all trends are based on some form or type of data – quantitative or qualitative. Some, especially those that run along the scale of geologic time, can give the appearance of stability or continuity. As such, it is essential to establish the context and basis for all trends.

From the apotheosis of the Internet over the past two decades to the meteoric rise of carbon emissions over past two centuries, our world continues to be shaped by trends on a variety of scales. Trends are drivers of substantive change and generally follow the S-curve – a standard graph that shows the change and development of a particular variable over time. Thus trends normally have a period over which they emerge slowly and then take off – this is when they make their maximum impact. However, nothing lasts forever. Trends tend to slow down at reaching structural limits and level off. All trends, by definition, will invariably end, but it is often the case that they can be reinvigorated and rebirthed. We only have to look at the astounding inequality of today's world, which harkens back to the gilded age, and perhaps even the age of pharaohs, to understand how

trends might endure over time and across contexts.

Some trends have a greater degree of path dependency than others, but scale does not equate to longevity. Take geoengineering, the large-scale and intentional manipulation of the global climate system which was sensationalized by the recent film, *Geostorm*. In the film, the world has developed technology to control the global climate system, until, of course, calamity ensues. Given the dire forecasts concerning climate change, some scientists, as well as a growing number of governments, believe that further interventions are necessary to abate the worst effects of our warming world. As such, it is possible, although implausible and even not preferable, that geoengineering should be used to forestall the warming trend, especially as the effects of climate engineering – from the possible disruption of the monsoon cycle to the multi-generational time-scale commitment of some proposals – remain speculative. Given the gravity of climate change, and in contrast to the deniers, it is difficult to imagine anything breaking this trend, but it remains, regardless of *Geostorm's* take at the box office, within the realm of possibility.

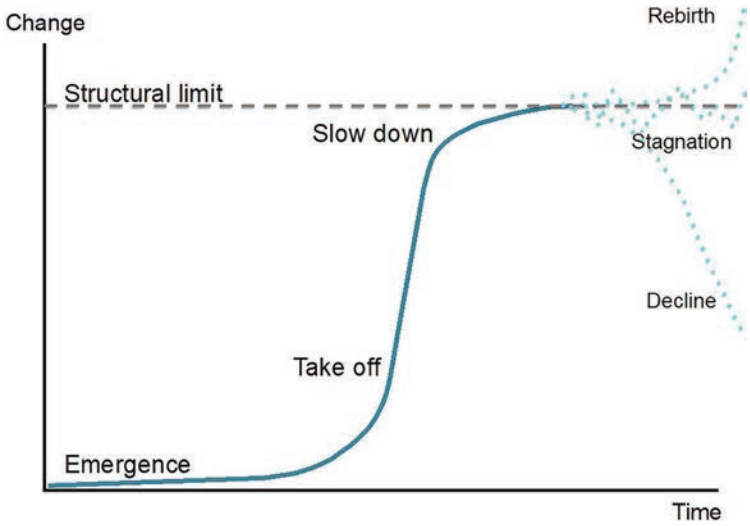

Figure 1: The life of a Trend

As a widely-used, and sometimes abused, tool, it is not uncommon for trends analysis to be lauded as a means to predict what might lie in the future. Consider the number of "Top 10" trends and mega-trends reports and articles for sale to witness how this foundational method can be misappropriated. As there is no such thing as 'the' future, it is foolish, as well as perilous, to assume that one can and might merely extrapolate phenomena from the present to know with any degree of certainty the complexities of what might lie ahead. Perhaps this was possible in a simpler age, but in postnormal times, any promise of predictability is false.

The blind trust on trends, an all-too-modern phenomenon, has much to do with our ongoing infatuation and emphasis upon evidence-based decision and policy-making. It seems we collectively and wilfully suffer from dual epidemics of short-sightedness and nostalgia. While there are a great many cultural and educational reasons for this, biology plays an important role in how we imagine possibilities for the future. Recently, neuroscientists found that our imagining of futures literally pass through memories: we inherently, and often literally, imagine the future through the lens of the past. This might serve as a partial explanation for the ongoing trend of populism, which has been fuelled by an appeal to mythic histories and promises of short-term solutionism. Some think that big data and predictive analytics offer glimpses into the future, and while these tools certainly will generate insights for combating a host of contemporary challenges, they are not adequate for critically and creatively imagining possibilities beyond our Extended Present.

The aim of trends analysis is not to predict the future, or divine a master list of content and/or data but rather to establish a breadth and depth of understanding about the Extended Present – the near horizon. In short, trends analysis aims to answer a seemingly simple question: what could be next? The challenge, then, of trends analysis is to critically examine what might lie ahead, what could be the possible consequences, and what we could do about it. Trends analysis ought to foster an acute understanding about what we are already seeing happen around us and a means by which to detect possible patterns of change from past to the present. Even the most technical, precise, and data-rich trends analysis will not provide a means to predict the future – nothing will.

Trend analysis has to be grounded on data. And most of the global trends with potential consequences for Muslim societies, as well as trends within Muslim societies with both local and global significances, we have identified are based on widely available data. However, not all trends 'out there' are supported by data. Lack of data may be due to the fact that these trends are not being researched and studied, or they are not recognised as trends per se. Consider, for example, the self-evident observation that uncertainty is increasing – thanks to political insecurity across the globe, lack of trust in financial institutions, and the subversive and the subtle power of social media, to mention just a few factors. Yet no one is tracking it and thus no numbers are available. Or the trends towards Islamic reform which can be traced back to the political activist Jamal al-din al-Afghani (1839-1897) and the middle of the nineteenth century. Such trends are supported by scholarly and academic sources. Where possible, we provide explanation for the trend(s). In all cases, we have highlighted potential implications for futures of Muslim societies.

Thinking and exploring futures begins by examining and analysing trends. But it is the first and, as is often the case, not the last step. It is easy to fall in the trap that trends predict 'the future' – particularly when most popular predictions are based simply on extrapolation of current trends. We emphasise the caveat: trends are not density. There is a lot we can do to change, modify and nudge trends towards positive directions.

POPULATION AND YOUTH

The Muslim population grew from 1.1 billion in 1990, which amounted to about 20% of the global population, to 1.62 billion in 2010. Estimates for future growth indicate that the Muslim population will rise to 2.19 billion (26.4%) by 2030 and 2.76 billion (29.7%) by 2050. At present, Muslims are the only religious group that is expected to increase (in both absolute and relative terms) in the coming decades, including people identified as religiously non-affiliated.

Additionally, Muslims are also the religious group with the largest youth population, almost 33% on average. In other words, one in every three Muslims is younger than 15 years old.

In the next two decades, it is estimated that the global Muslim population will grow at an average rate of 1.5% more than doubling the 0.7% of non-Muslims. A comparison between Muslim and non-Muslim populations can be seen in Figure 1. In absolute figures, almost all religions will have some growth, as can be seen in Figure 2 below, but as the world's population increases, the only religion that shows relative progression is Islam.

Several reasons explain this dynamic:

1. In general, Muslim countries have a higher fertility rate (total number of children per woman) both actual and projected. However, fertility estimations in these countries can range from 2.9 to 2.6 children per woman from 2010 to 2015. According to UN data, the global average for the same interval would be 2.4, and this drops to 1.6 in developed countries.

2. Muslim countries have more youth with a greater segment of the population in prime reproductive stages (15 to 29 years old). In 1990, Muslim youth amounted to 20% of the world's total young adult population, but by 2010, they accounted for 25.8%. Projections are that this will rise to 29.1% by 2030.

3. An improvement in health conditions has also led to a bigger drop (in relative

terms) of the mortality rate in Muslim countries. Notably, infant mortality has fallen from 70 deaths per 1,000 live births in 1990 to 40 deaths per 1,000 in 2010.

4. In light of the notable betterment in health conditions, it should come as no surprise that Muslim societies could witness the highest rise in life expectancy. In 1990, Muslim life expectancy was roughly 62 years old in countries with a majority Muslim population, but by 2010, it had already risen to 66 years old and the projections are to reach 73 years by 2030.

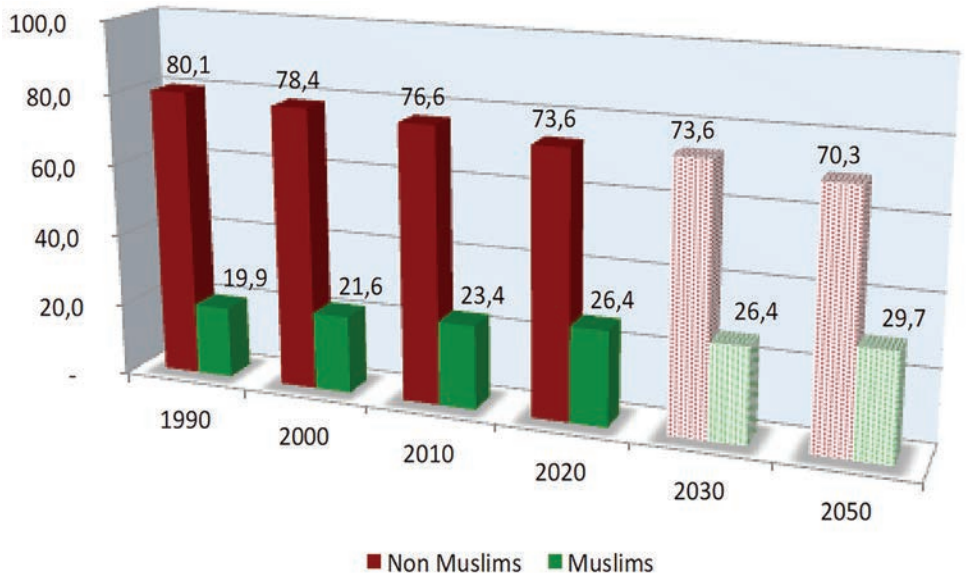

Figure 1: Relative Growth of Muslims vs. Non-Muslims

Turkey forms an interesting exception to the global Muslim fertility boom. Turkey itself being the gateway to the West, shares the characteristics of both Western European and general Muslim societies. For instance, Turkey has a young population like other Muslim societies, but a drastically low fertility rate. So low, in fact, that the government is promoting a baby boom. This fertility rate is caused by the coupling of mass infertility and a European anxiety amongst the youth for starting families; and other medical factors leading to fertility problems among the child bearing aged population. Youth trends show how Western sentiment, shown most apparently in Japan, is becoming a global concern targeting fertility. Fertility aside, the youth of Turkey worry about the future and moral weight of bringing children into the contemporary world.

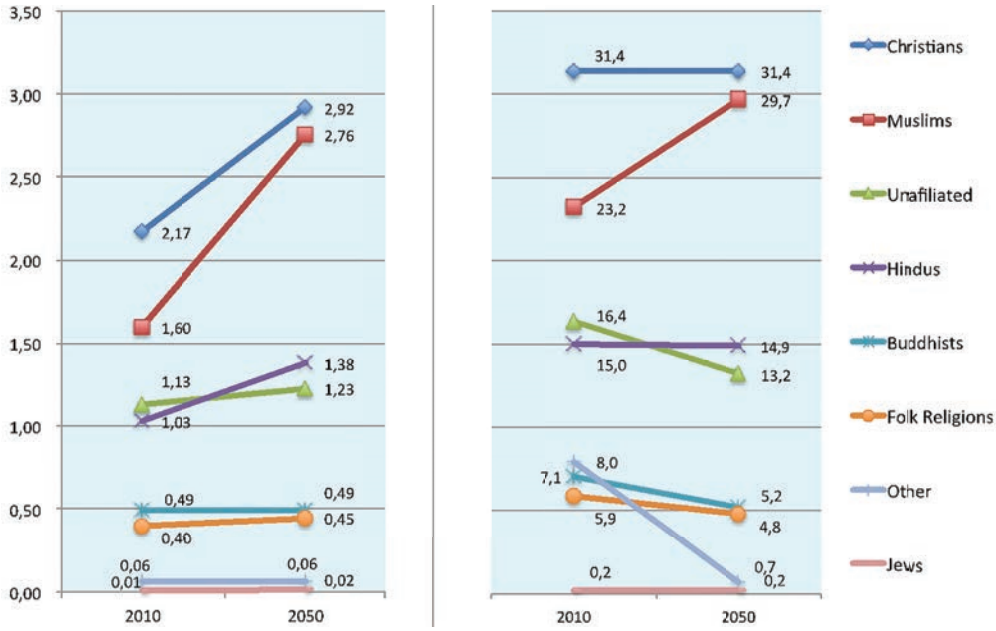

Figure 2: Comparative Growth (Absolute and Relative) of Global Population by Religion

It is worth developing a bit more context concerning Muslim youth within predominantly Muslim countries versus the global youth population. If one compares the three major age groups (shown in Table 1), one can see that the differences are significant.

Muslim countries have a notably larger share of youth. Another facet to take into account is income level, and Muslims countries tend to follow a similar age distribution regardless of income level (as shown in Table 2).

When looking at all of the data, a clear pattern emerges: first, there are only four predominantly Muslim countries (Qatar, UAE, Macedonia and Bosnia) where less than 20% of the population is youth; second, only three Muslim countries (Bosnia, Macedonia and Albania) have 10% of citizens aged 65 years or older. This indicates that the growth potential of Muslim countries will remain high, if not increase, in the coming years.

If we take the top six Muslim countries (shown in Table 3) with the largest population, we can see that each has huge segments of youth, and only Iran is below 25% while Pakistan is beyond 30%. This indicates that these countries may face increasing problems to sustain their fast-growing population.

Based on these numbers, the decisions made by Muslim youth will have a tremendous impact on the future of the Muslim world. To begin with, large numbers of Muslim youth are seeking education outside of their home countries. UNESCO has the countries of Saudi Arabia (with 5,660 students abroad), Iran (4,254), Nigeria (3,257), Pakistan (2,502), Bangladesh (1614), Malaysia (1,224), and Morocco (1,125) in its

top twenty countries for exporting students abroad. The National Institute of Health in the US did a study to see how many students from abroad who pursued degrees in STEM desired to remain in the United States after graduation. While Asian students made up the majority of students studying abroad in America, 64% of them desired to remain as did 7% of the students from the Middle East. Saudi Arabia was one of the leaders in this study with 5.4% of its students abroad wishing to remain in the United States after graduation.

Table 1: Comparison of Major Age Groups Between World and Muslim Countries

Age distribution	From 0 to 14	From 15 to 64	65 and above
Muslim Countries	32.69	62.98	4.35
World	26.31	65.75	7.94

Table 2: Comparison of Major Age Groups Between Muslim Countries and the World by Income

Age distribution	From 0 to 14		From 15 to 64		65 and above	
	World	Muslim	World	Muslim	World	Muslim
High income	16.98	22.73	66.99	72.58	16.04	4.71
Middle income	26.52	32.79	66.91	62.92	6.57	4.24
Low income	39.18	42.60	57.09	54.43	3.74	2.97

Table 3: Top Six Muslim Countries by Population and Percentage of Youth Ages 0-14

Country	Population	% 0-14
Bangladesh	148.607.000	30.00
Indonesia	204.847.000	28.89
Pakistan	178.097.000	33.83
Egypt	80.024.000	31.14
Iran	74.819.000	23.81
Turkey	74.660.000	25.66

Western influence of Muslim youth is also highlighted through media consumption. Northwestern University did a six-nation study that found a larger percentage of Muslims preferring their music, film, and media come from Arabic sources than

Western, but noticed a lack of content in this area. Larger numbers of Muslims have become more open to free expression online and prefer loosened government restrictions. Increasing fears have been cited in government surveillance of internet activity and increases in VPN usage were also noted. These trends ought to be continued to be monitored and more study should be done into the variety of languages the Muslim youth speak, dedication to the preservation of their parents' traditions, and their confidence and satisfaction with government and international affairs.

In most of the Muslim countries with available data, youth unemployment (ages 15 to 24) is comparatively higher than the global average. As education programmes become more available, youth often delay incorporation into the labour market. However, it is likely that many Muslim youth will have no option but to seek out employment opportunities elsewhere.

It is important to keep in mind the Muslim youth trends as they will significantly affect the future of the trends covered in this book as well as give rise to new emerging issues.

Implications

- Many Muslim countries will experience increasing difficulties to sustain a rapidly growing population.
- On average, Muslim communities are younger and, therefore, will retain a higher potential for further growth in the coming decades.
- The competition for education, employment, and living could provide a potential boom to the economy, but only if the proper infrastructure is in place and more appetizing opportunities do not lie abroad. To extend our frame of thinking to the long term, all young populations must eventually become aging populations. If Muslim communities follow the trend of the West, birth rates will reach a threshold in conjunction with the fast paced and leisurely life. The struggles of social welfare, healthcare, and a burden on the next generation are sure to follow and the present is as good a time as any to begin preparing for this coming storm.
- Muslim minorities in many countries will become the major religious groups (in several European countries) or become significantly larger communities (India or USA).
- If the present trend of Islamophobia does not abate (see Armed Conflicts and Terrorism), increased population growth may exacerbate it.
- Continued instability and armed conflict could produce a lost generation that does not repopulate or engage in economic practices necessary for developing societies.

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ENVIRONMENT AND LIVEABILITY

An increasing number of Muslims are facing a range of environmental challenges that undermine their liveability. If current environmental trends persist, most Muslim countries will suffer from one or some of the following challenges: scarcity of fresh water, temperature increase, desertification, and sea-level rise. While just one of these factors has the capacity to worsen liveability, the real danger comes from the combined and compounded effects of these challenges, which together can and might produce a positive feedback loop leading to catastrophe. In many Muslim countries, accelerating urbanization has led to a heavier ecological footprint, which makes many population centres susceptible to disorder.

In Figure 1, one can see a projection of Muslim countries that are likely to suffer from water scarcity in the coming decades. In many of the countries with a current water deficit, water basins are severely stressed, and this greatly reduces options of finding alternative sources of fresh water. This is displayed in Figure 2.

In Yemen, for example, farmers have deepened their wells by more than 50 meters to get just one third of what they were getting before.

Temperature increases add another concerning element, and many Muslim countries will be heavily affected by global warming (Figure 3). This dynamic poses an additional liveability burden as it is likely to produce a rise in energy consumption.

Desertification is also expected to affect many Muslim countries. In Figure 4, a very high level of desertification vulnerability is noticeable in places already facing a range of environmental challenges.

While projections for sea-level rise remain speculative, it must be noted that even a slight increase could have a major impact within many Muslim countries. In Figure 5, one can see a projected rise of seven metres within the Middle East. Flooded areas include many densely populated areas, from the Nile Delta to the coast of the Persian Gulf.

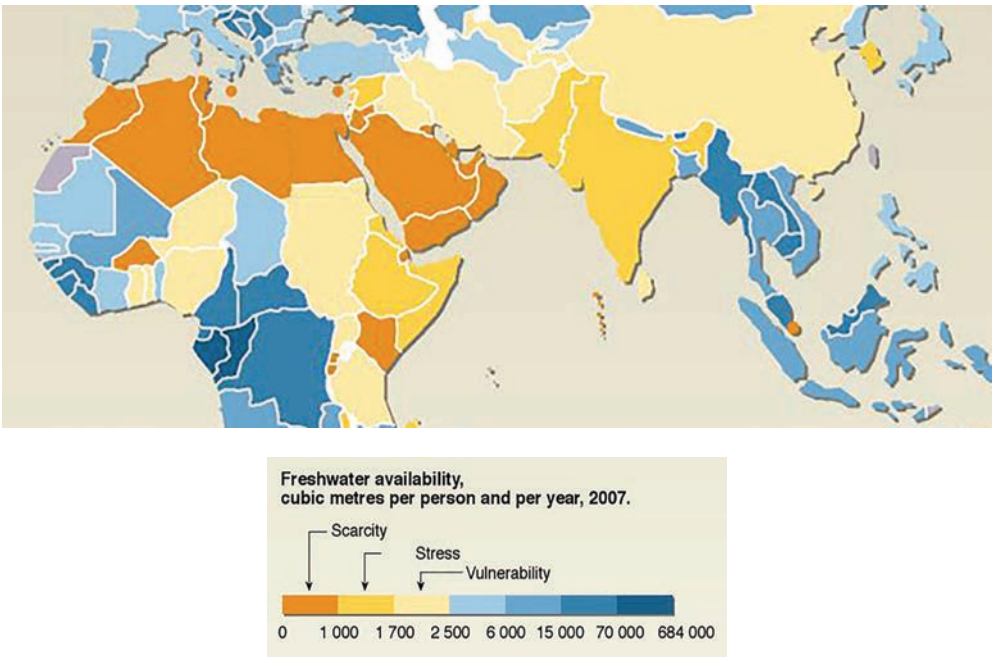

Figure 1: Water Scarcity Map

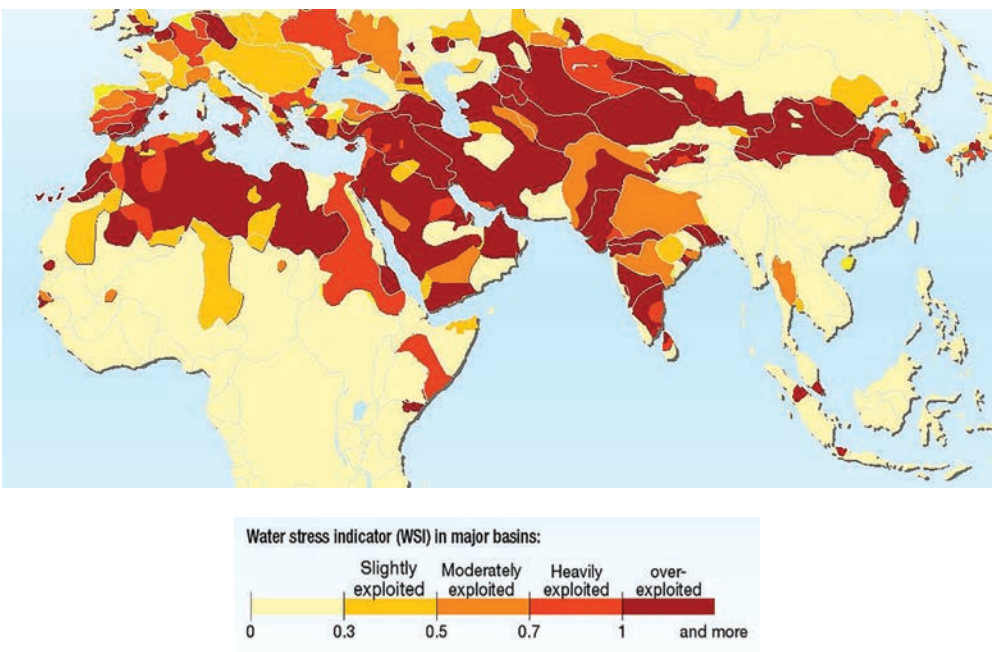

Figure 2: Stress in Major Water Basins

Muslim countries with greater wealth may be able to develop contingency plans to lessen the impact of these phenomena by buying additional resources elsewhere and investing in new technologies. However, those with lower economic capacity may not be able to adapt or mitigate such dramatic affects.

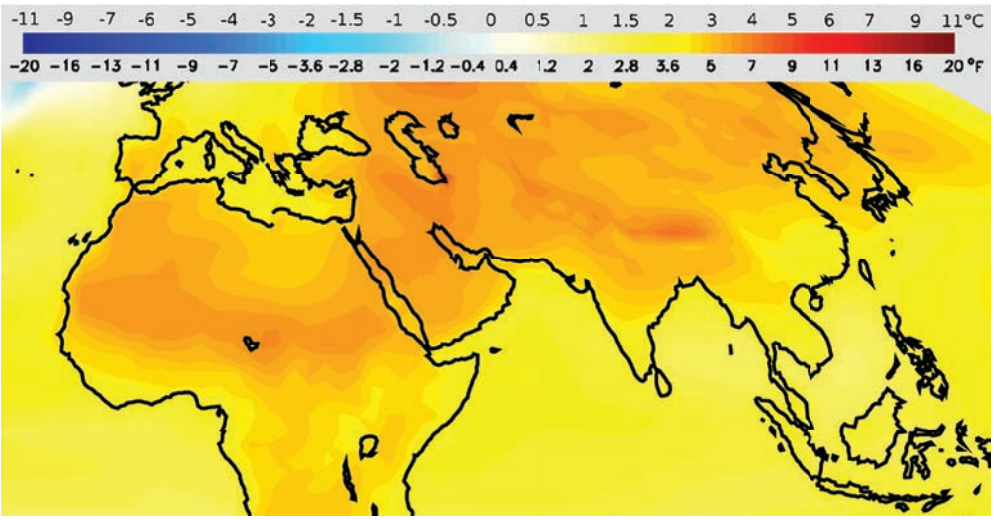

Figure 3: Projected Temperature Changes

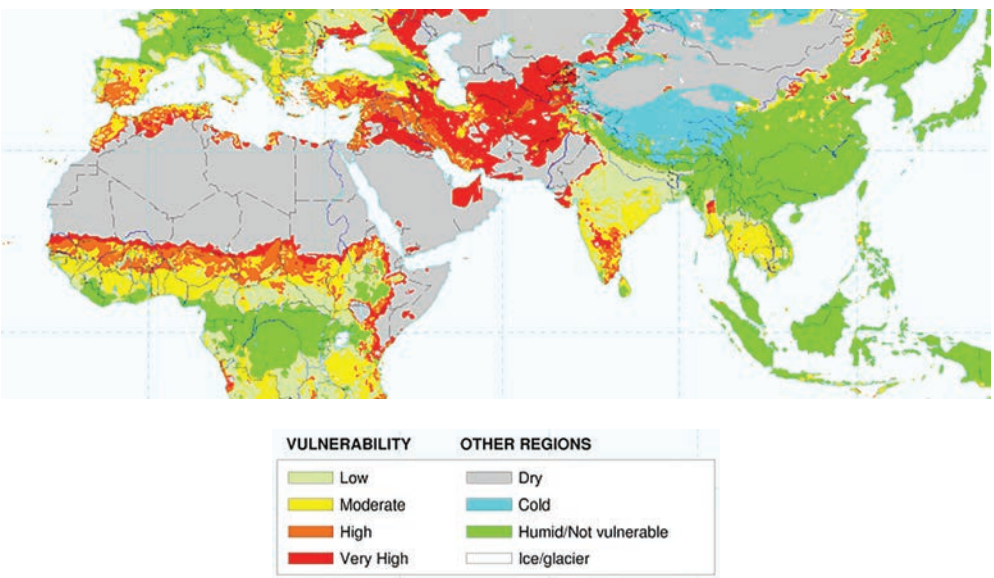

Figure 4: Desertification Vulnerability Map

Figure 5: Seven Metre Sea-Level Rise Within the Middle East

Finally, it must be noted that all of the above environmental dynamics are unfolding in regions already struggling with a range of economic and political challenges. Consequently, environmental factors only add a new, and often less addressed, level of complexity.

Liveability may also be affected by urbanisation which continues to be a global trend with a host of impacts. In 2010, urban dwellers surpassed 50% of world's total inhabitants, and UN data projects that between 66-70% of all people will live in cities by 2050. In Muslim countries, urbanization has been intense but also unequal, especially when one looks at both the percentage of national population within urban areas and regional urban agglomerations.

The diversity of urbanization within Muslims countries is quite stark, both in terms of percentage of population and regional urban agglomerations (Figure 6). In the first column of Table 1, we can see the average percentage of urban population in Muslim countries versus countries categorized by income. According to the data, Muslim countries are almost exactly on the world mean and somewhere between middle and high-income countries. Yet, the rate of population growth within Muslim countries, shown in the second column, is higher than the global average and second only to that of low-income countries.

In the third column, one can see the percentage of urban dwellers in large cities, and Muslim countries have, again, a similar behaviour to that of low-income countries. Finally, the last column, presents the percentage of citizens with access to sanitation, and Muslim contexts are clearly beyond low-income but still not within the range of

middle-income countries. Although urban percentage places Muslim countries between middle and high-income countries, other indicators would situate many Muslim countries within the low-income category. This likely reveals that most Muslim countries do not have a balanced territorial strategy, and as rural areas lose population to cities, liveability will pose a challenge as competition for local and regional resources escalate.

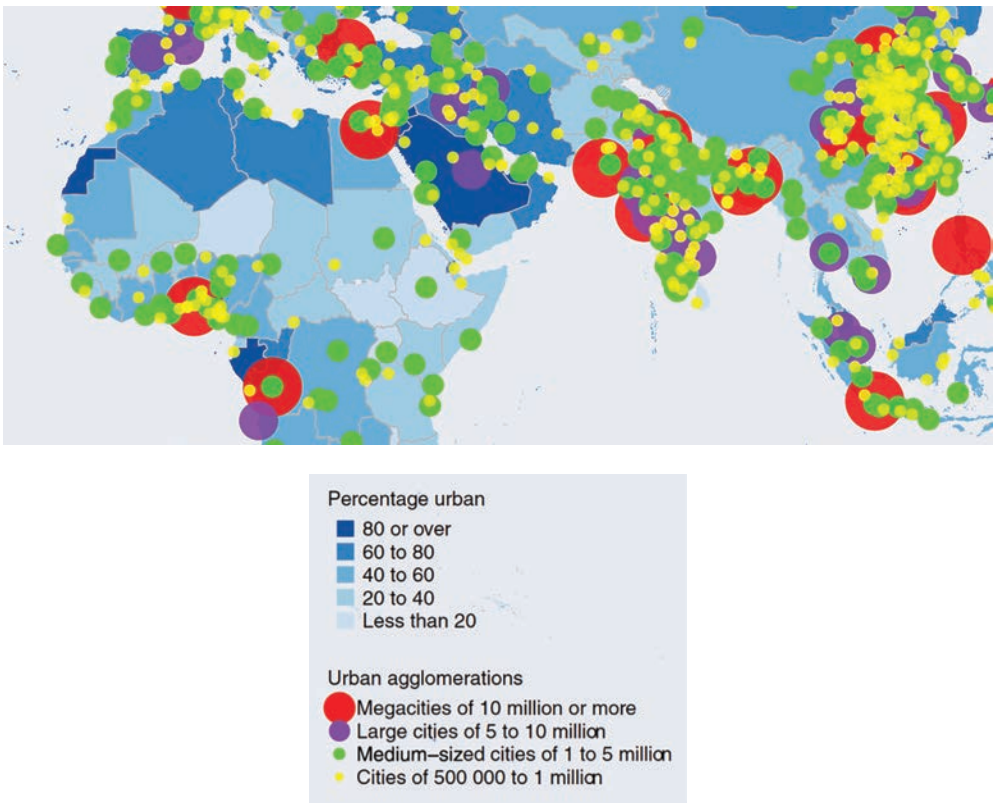

Figure 6: Muslim Urban Population (Percentage and Agglomerations)

Table 1: Muslim Urban Population Data

	% Urban	Growth	Largest cities	Sanitation
Muslim Countries	54	3.0	32	66
World	53	2.1	16	82
Low Income Countries	30	4.2	32	40
Middle Income Countries	35	2.5	14	79
High Income Countries	81	0.8	19	97

Implications

- Basic resource availability (food and water) will become a major concern for many Muslims countries, and the scarcity of these resources will inevitably lead to growing tensions and conflict at both intra- and inter-state levels.
- The emergence of more megacities will likely create additional burdens for already stressed Muslim countries.
- Refugees fleeing climate change within Muslim countries are very likely to increase.
- Sea-level rise will severely impact the coastal and low-lying regions of many Muslim countries, which have not made investments to deter this phenomenon.

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POLLUTION AND ENDANGERED CITIES

The famed science fiction tropes of smoky dystopian cityscapes and once thriving metropolises lying in ruin are looking more and more probable in the near future. While these apocalyptic sets may not come as the result of nuclear war or alien invasion, it could be something much simpler at play. The human carbon foot print is taking its toll on the cities of the world. Pollution is making the air unbreathable. The tide of global warming is creating extreme weather conditions that could result in devastating floods and storms or massive drought and extreme temperature rise. While international efforts such as the Paris Accords are currently underway to try to curb the threat of our carbon induced destruction, changes are already occurring that are making Earth less and less inhabitable. The most drastic of these cases effect equatorial areas of the world and the Middle East and present a direct threat to Muslim societies. Cities like Cairo, Karachi, Kuala Lumpur and Jakarta are experiencing exceptional high levels of pollution.

Air pollution peaks during the winter where particulate matter (PM) can be detected based on a scale of PM2.5, that being particles that are 2.5 micrometres or smaller. These particles are typically produced by combustion engines, power plants, industrial plants, and through forest fires. PM2.5 readings in the global South give an air concentration of over 700 micrograms per cubic metre. The WHO has set the level of 300 micrograms per cubic metre as the point of "hazardous" air pollution. Air pollution can also be measured by PM10 which measures coarser particles in the air usually drawn up by industrial processes and the kicking up of dust when vehicles drive through a city. The combined readings of PM2.5 and PM10 give an idea of various cities' pollution rates throughout the world. Table 1 explores the most polluted Muslim cities in the world. Saudi Arabia, Pakistan, Nigeria, and Iran are home to these polluted cities.

Table 1: Dangerously Polluted Muslim Cities

City	PM2.5	PM10
Zabol, Iran	217	527
Peshawar, Pakistan	111	540
Riyadh, Saudi Arabia	156	368
Al Jubail, Saudi Arabia	152	359
Dammam, Saudi Arabia	121	286
Onitsha, Nigeria	70	594
Mazar-e Sharif, Afghanistan	82	334
Hamad Town, Bahrain	69	334
Karachi, Pakistan	115	290
Kabul, Afghanistan	86	260

The rate of pollution in these cities is at a point of major health concern for their citizens. Simply walking around in these cities can be the health equivalent of smoking several cigarettes in a given day. In certain cities, there is so much pollution that they become invisible – for example, Kuala Lumpur suffers from what is described as 'haze' which lasts for months.

Further pressure on cities comes from rising populations which could make many Muslim cities inhabitable. In Table 2, the most populated Muslim cities in 2016 are extrapolated to the current population trends into 2030. As can be seen, these metropolises look to become Megametropolises that will demand a great deal of resources to sustain themselves and contribute a colossal amount of waste that could lead to further environmental degradation down the road.

Table 2: Most Populated Muslim Cities 2016 and 2030

City	2016 Population (millions)	2030 Population (millions)
Dhaka, Bangladesh	18.0	27.4
Karachi, Pakistan	17.1	24.8
Cairo, Egypt	19.1	24.5
Lagos, Nigeria	13.7	24.2
Istanbul, Turkey	14.4	16.6
Jakarta, Indonesia	10.5	13.8
Lahore, Pakistan	8.7	10.7

Many of these cities are capital cities and major economic centres for their constituent countries. Their degradation would be a major impediment to further development and flourishing of Muslim societies.

Climate change will also have a direct impact on a string of Muslim cities. The major threats pertain to exceptionally high temperatures, massive flooding, rise in sea level and water shortage. Coastal Muslim cities such as Lagos, Cairo, Karachi, and Jakarta, are all targets for the rising of sea levels as well as an increased occurrence of extreme weather such as typhoons. In the Muslim cities not along the coast, the lack of water would be the largest problem. Khartoum, Dhaka, and Riyadh are already faced with these problems. According to the *World Water Development Report*, between 4.8 and 5.7 billion people will live in areas that are water scarce for at least one month every year by 2050.

Raising temperatures will only perpetuate the shortage of water. Rising heat is one of the leading dangers facing many Muslim cities. Already, temperatures as high as 54°C have been recorded in Ahbaz in south-west Iran.

The rising heat of Muslim cities is beyond simply an inconvenience, it can be potentially fatal to those who do not have access to adequate air conditioning and water supply. Experts agree that the survivability threshold is when the wet bulb temperature exceeds 35°C (95°F) AND the humidity exceeds 90 percent. This is the point at which the human body's sweating mechanism can no longer cool the body temperature. Without a change in humidity or ample supply to hydration, even a fit human would die after a few hours of this exposure. This temperature can be greatly affected by humidity, but heat waves in the fifties (over one hundred twenty degrees Fahrenheit), have proven fatal in South Asia and appear to be happening in more regular intervals. By the year 2100, many cities in the Middle East and equatorial parts of Africa and Asia are projected to experience average summer time temperatures of 74°C-77°C during the six most sunny hours of the day. Cities such as Abu Dhabi, Dubai, Riyadh, Cairo, Karachi, Kuala Lumpur, and Khartoum will experience such temperatures.

It should be noted that the impacts of global warming (Figure 1), and its consequent threats such as extreme heat, water shortage and increases in pollution, are not going to occur independent of each other. They will all occur at once; and in regions already ridden with armed conflict, political corruption and social strife. If temperatures continue to rise even by two or three degrees on a global average, more ice will melt and the sea levels will rise. Some Muslim cities will be half underwater, while other cities will have a concept of water in nature as a distant memory. The holy cities of Makkah and Madinah will also be struck by this water shortage and temperature rise; the pilgrims on hajj could find the experience much more challenging by braving the harsher environment in fulfilment of their religious obligation.

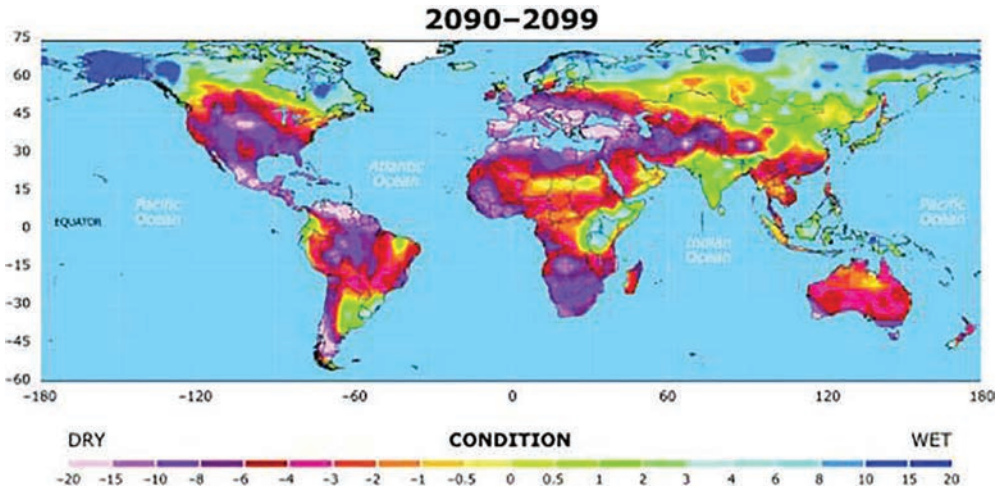

Figure 1: University Corporation for Atmospheric Research (UCAR) Future Global Warming Impact Map

Implications

- Muslim cities face serious threats from temperate rises, coastal flooding and urban growth and are in danger of becoming uninhabitable.

- Muslim cities need to develop contingency plans and prepare for massive population movements and influxes. Mass migration will result either from people needing to flock to the cities for resources and employment, or to escape ecological catastrophe.

- Cities that find themselves at risk for environmental hazards should begin equipping buildings with water collection and filtration systems, and ecologically sound air conditioning systems.

- Steps can be taken to combat carbon emissions through an adoption of alternative sources of energy such as solar or wind. This may initially threaten the strong oil economies, but the questions of wealth now or down the road need to be considered. Oil is also a non-renewable resource, so it too, like human liveability, has its limits.

- Some of these endangered cities have great historic and cultural value, and a sense of home and belonging to a world civilization. In these already confusing and complex times, the emergence of ghost cities and consequent displacement of populations will delink Muslims from their history and cultural property and thus further alienate Muslim societies from the contemporary world.

- Despite the fact that Muslim cities are among the most immediately impacted by the effects of pollution and climate change, a suitable resolution is attainable with collective action and support of the rest of the world. This phenomenon is truly global, it cannot be contained by national borders, and requires collective, global action.

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MIGRATION AND REFUGEES

Traditionally the migration from Muslim countries to the West was prompted by the pursuit of a better life, a greater opportunity for education and economic success. This often resulted in a 'brain drain' – the loss of talented professionals to the West. There were hurdles in this pursuit, but they were largely the result of red-tape entangled immigration legislation and citizenship laws. Muslim-majority countries are still a net contributor to global migration, but this trend has now reduced to a trickle. Europe has closed its borders and while the United States is still relatively open, migration to the US is by no means easy.

In contrast, the Muslim refugee population has increased by manifold. The global number of displaced persons is at its highest level since World War II at 65 million. 22.5 million are refugees. Two thirds of those are Muslim. At 4.9 million, Syrians make up the largest refugee population in the world, followed by Afghanistan (2.7 million), and Somalia (1.1 million). Millions more Muslims from Sudan, Nigeria, Iraq and Libya are living as refugees. The most recent wave of refugees comes in the form of approximately a million Rohingya Muslims fleeing the persecution in Myanmar in 2017 alone. Currently being over shadowed by conflict in Syria and Afghanistan, 7.2 million Palestinians refugees remain displaced throughout the world.

While the armed conflicts that give rise to refugees do effect European migration of Muslims, it must be noted that the largest populations of refugees are in fact in Muslim countries. Most of the refugees fleeing Syria are in Turkey (over 2 million), Lebanon (over 1 million), and Jordan (over half a million). In fact, about one fourth of Lebanon's population consists of refugees. Around 1.5 million Palestinians live in 58 recognized refugee camps in Lebanon, Jordan, and Syria as well as the West Bank and Gaza Strip. An estimated one million refugees have fled to Bangladesh from Myanmar to avoid persecution. Iraq, Egypt, Saudi Arabia, Pakistan, Malaysia, and Indonesia have also become home to hundreds of thousands of Muslim refugees (Figure 1).

There are two conventional factors that have contributed to the rise of Muslim refugees: the persistence of several armed conflicts throughout the Muslim world (see Armed Conflicts and Terrorism) and mass unemployment (ages 15 to 24) which forces young people to seek better opportunities in Europe and other developing countries – the so-called 'economic refugees'. In 2013, the average unemployment rate in Muslim countries was 19.9%. Given the lack of opportunity in their own countries, it is likely that many Muslim youth, some highly educated, will have no option but to seek out employment opportunities elsewhere. So both political and economic refugees are set to escalate.

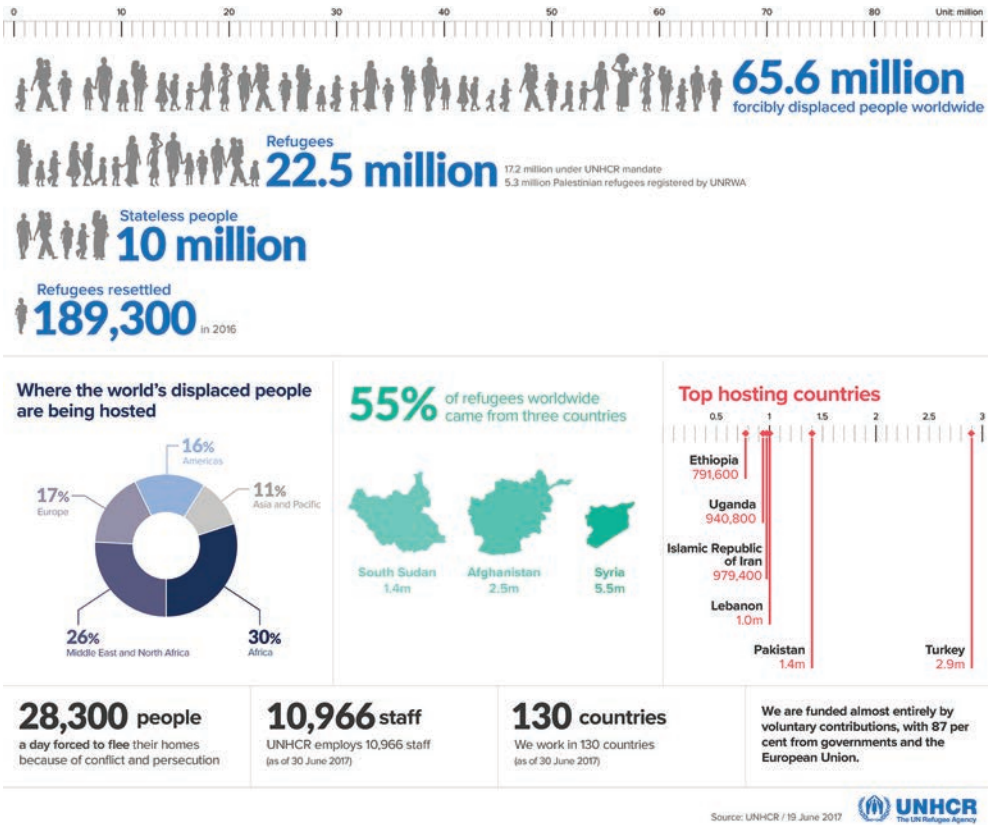

Figure 1: Global Number of Displaced Persons Worldwide (UNHCR, 2017)

Now we can add a third factor: the potential emergence of ecological crisis (see Environment and Liveability). As such, the Muslim refugee population is set to increase even further with the arrival of 'climate refugees'.

The migration patterns, and the arrival of Muslim refugees, is set to alter the Muslim population of Europe. In 2016, the population of Muslims in Europe rose to 25.8 million from 19.5 million in 2010. The number of Muslim immigrants has spiked

between 2014 and 2016, averaging a half a million people annually. This rate is expected to endure as conflicts continue in Syria, Iraq, and Afghanistan. Sweden tops the list as its Muslim population is expected to triple, making Muslims 20.5% of the entire population (Figure 2).

These recent waves put Muslim refugees in hostile territory throughout Asia and Africa or on dangerous travel routes to the West. The tightening of immigration regulations in the US and Europe coupled with the rise of nationalistic and Islamophobia sentiment only exacerbate the plight of Muslim refugees. Between 2013 and 2014, 15,846 victims of human trafficking were registered in Europe: 2,375 of them were children. 67% of these victims were trafficked for sex work, while 21% were put into forced labour. The remainder suffered a variety of other forms of human servitude. Approximately 96,000 unaccompanied Muslim minors sought asylum in Europe in 2015; 10,000 of these children have fallen off the radar of European authorities.

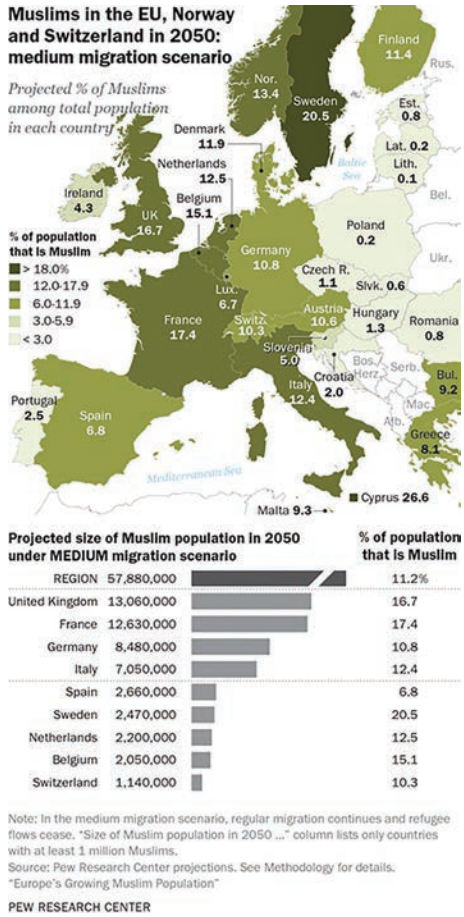

Figure 2: Medium Migration Scenario for Muslims in the EU, Norway and Switzerland in 2050

Implications

- The refugee crisis is a major turning point for Muslim societies as generations stand to be born into camps or displaced lands beyond that of their parents.

- Climate refugees, Muslims escaping ecological catastrophe in their homelands, are set to emerge as a new trend.

- Muslim population of Europe is set to increase, which will be seen by Islamophobes as a threat but may present an opportunity for the aging population of Europe as well as for Muslim communities themselves.

- Muslim refugees may face increasing hostilities, and suffer from alienation and loss of human dignity because of a rise in Islamophobia in the form of extreme nationalism and fascist behaviour.

- The Muslim world as a whole will need to work together to make their homelands hospitable and pay attention to the needs of a rising young population.

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POLITICS AND GOVERNANCE

In many Muslim countries, governance mutates from democracy to autocracy, and often passes through diverse forms of anocracy, which rebukes the cliché that Islam is essentially antidemocratic. Anocracy is the label that refers to those regimes, plagued with political instability and ineffectiveness, that mix democratic and authoritarian features and that are quite susceptible to violent outbreaks and rough shifts in government leadership. According to results from a survey of Muslims in 37 countries across Europe, Asia, and Africa, 63% of respondents preferred democracy to strong leaders. However, if one places the main 42 Muslim countries within a range of 10 (total democracy) to -10 (absolute autocracy), the mean results is 0.047, which implies that many Muslim governments may be inherently unstable. Exacerbating this trend, many Muslim countries struggle with persistent corruption, and this dynamic has become a major deterrent for stability and political evolution across the Muslim world.

The debate about the political side or implications of Islam is plagued with misconceptions, clichés, prejudices, and misinformation. The Center for Systemic Peace directed a lengthy project, *Polity IV*, to study global democracy. The results of their project can be seen below.

As Figure 1 indicates, this project elaborated a set of criteria to determine the kind of political regime each country has by assigning it a numerical estimation. Countries on the far left (those in between the orange and red lines with a ranking of -10 to -6) were seen as more autocratic. Those within the purple lines (-6 to 0) were seen as being anocratic. On the other side, countries from 0 to +6 were seen as an open anocracy (green block). Finally, the segment from +6 to +10 was reserved for democratic regimes (encircled in blue). Examining the results, one can see that only 10 countries (Albania, Comoros, Indonesia, Kosovo, Kyrgyzstan, Pakistan, Senegal, Sierra Leone, Tunisia, and Turkey) were seen as democratic. The study found that 10 countries were distinctively autocratic and 22 fluctuate within varying degrees of anocracy. Given that one of the traits of an anocratic government is inherent instability,

this explains why many Muslim countries struggle with governance issues.

Many autocrats have used chronic instability as a legitimation for consolidating power. However, a survey conducted by the Pew Research Center shows that a significant majority of Muslims are not supportive of authoritarian leaders. As shown in Figure 2, only five of 37 (about 14%) of respondents, which are collated by nationality, seem to prefer a strong leader to democracy. According to the median results, 63% of respondents favoured democracy over autocracy.

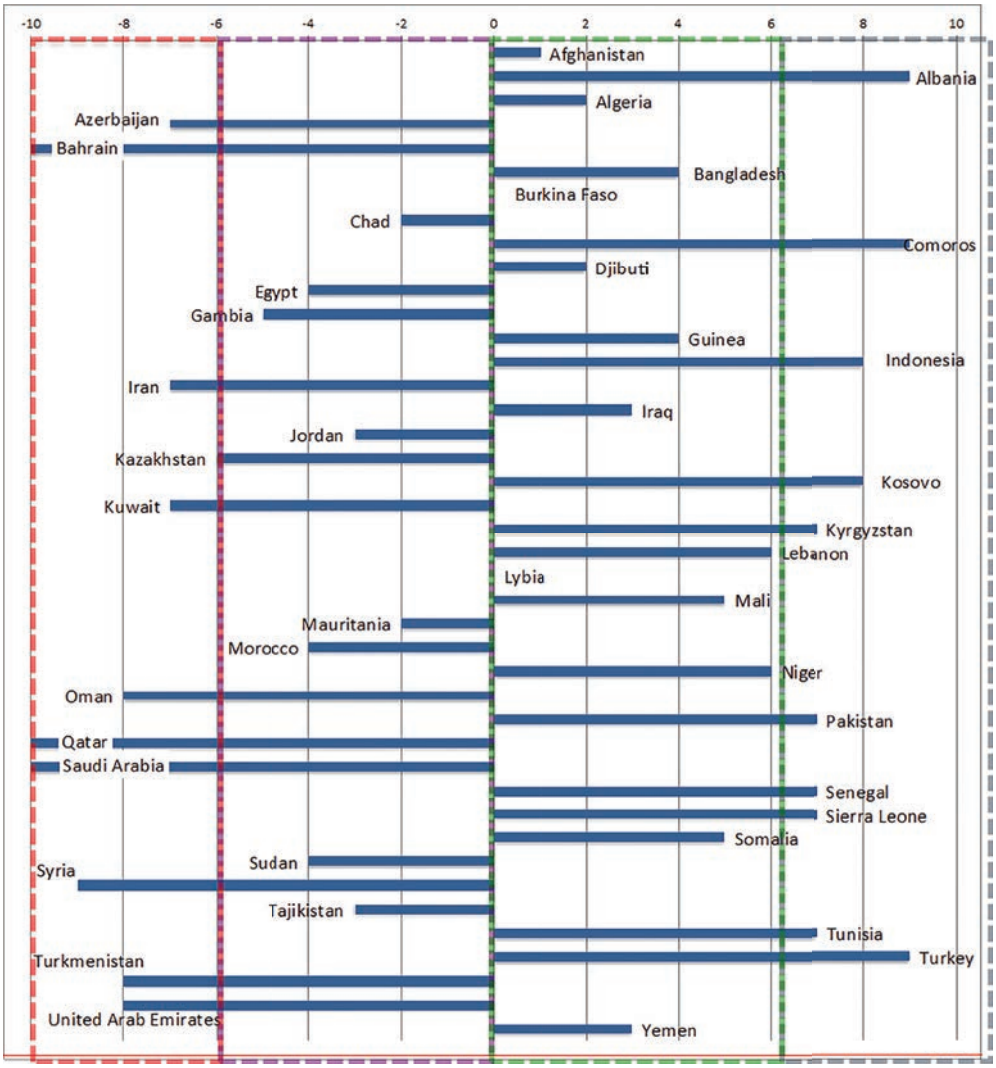

Figure 1: Distribution of Muslim Countries on an Autocracy-Democracy Axis

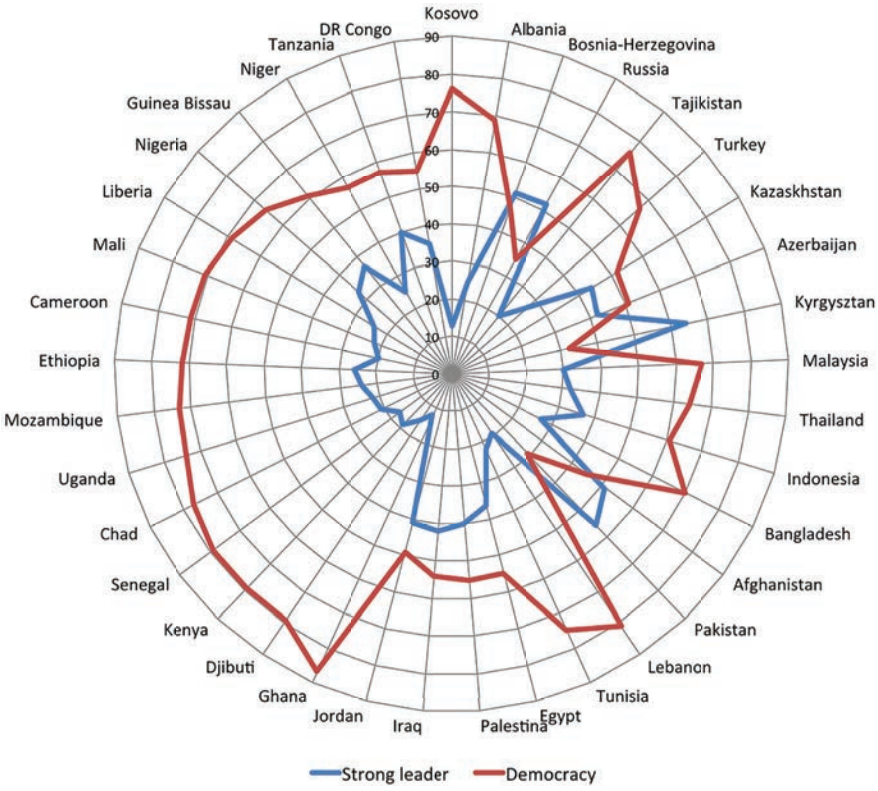

Figure 2: Distribution of Political Preferences

It is impossible to discuss governance within Muslim countries without understanding the complex dynamics of Shariah. In the same survey, every Muslim-majority country favoured Shariah, and none of the respondents were below 64% with some reaching more than 80%. In Central Asia and Europe, however, support for Shariah was much lower (averaging about 20%).

As internal debates about how to integrate Shariah and democracy continue both within and outside of Islam, it is worth noting that the former is a juridical system and the latter a political system. Consequently, they have different, albeit interrelated, contexts, subjects, and objectives. With that said, the degree to which one separates legal and political dynamics has much to do with the specific case in question, and it is perhaps best to realize that there are a range of interpretations and practices that constitute the Shariah.

In spite of the insistence upon Shariah, corruption continues to plague many Muslim countries. According to Transparency International, the 2014 Corruption Perception Index (CPI) average score for Muslim countries (33) is 10 points lower than the global mean (43) and 21 points less than the G20 average (54) and half of the EU's (66) score. In Figure 3, one can see the representation of CPI for Muslim countries (noted by the red and dark red shading).

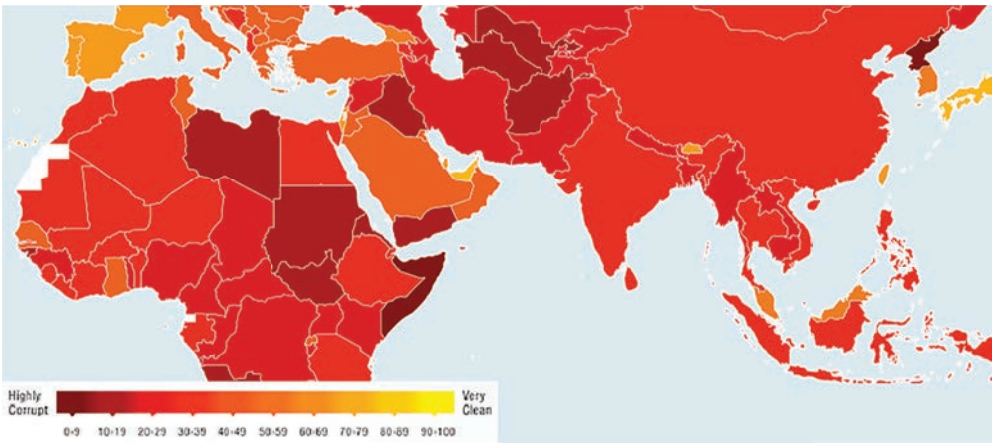

Figure 3: Corruption Perception Index for Muslim Countries

In looking more closely at the CPI data, the top Muslim country (the United Arab Emirates) ranks 25th, and among the top 50 countries, Qatar (31) is the only other predominantly Muslim country. Of the top 100 countries, only 14 Muslim countries made the cut. As indicated in the detailed listing in Table 1, most countries have improved their ranking between 2012-2014, although both Turkey and Bosnia & Herzegovina are clear exceptions. As the data suggests, there is wide margin for improvement across the Muslim world, and this key indicator provides a strong argument why anocracy remains predominant in Muslim contexts.

Implications

- Muslim countries have yet to develop political systems that effectively integrate Islamic principles with the complexities of stable governance.
- Focusing on Shariah might be hampering a deeper debate on the political implications of Islamic governance by focusing questions of identity and values solely on legal issues.
- Debates about the theocratic basis for a truly Islamic government remain unresolved.
- Corruption and lack of transparency are major obstacles to political reform in many countries and, if not remediated, will continue to foster instability.

Table 1: Corruption Perception Index Ranking for Muslim Countries

Country	2014 Score	2013 Score	2012 Score
United Arab Emirates	70	69	68
Qatar	69	68	64
Malaysia	52	50	49
Bahrain	49	48	51
Jordan	49	45	48
Saudi Arabia	49	46	44
Oman	45	47	47
The FYR of Macedonia	45	44	43
Turkey	45	50	49
Kuwait	44	43	44
Senegal	43	41	36
Tunisia	40	41	41
Bosnia and Herzegovina	39	42	42
Morocco	39	37	37
Burkina Faso	38	38	38
Egypt	37	32	32
Algeria	36	36	34
Niger	35	34	33
Djibouti	34	36	36
Indonesia	34	32	32
Albania	33	31	33
Ethiopia	33	33	33
Côte d'Ivoire	32	27	29
Mali	32	28	34
Sierra Leone	31	30	31
Mauritania	30	30	31
Azerbaijan	29	28	27
Gambia	29	28	34
Kazakhstan	29	26	28
Pakistan	29	28	27
Iran	27	25	28
Kyrgyzstan	27	24	24
Lebanon	27	28	30
Nigeria	27	25	27

Country	2014 Score	2013 Score	2012 Score
Comoros	26	28	28
Bangladesh	25	27	26
Guinea	25	24	24
Tajikistan	23	22	22
Chad	22	19	19
Syria	20	17	26
Guinea-Bissau	19	19	19
Yemen	19	18	23
Eritrea	18	20	25
Libya	18	15	21
Turkmenistan	17	17	17
Iraq	16	16	18
Afghanistan	12	8	8
Sudan	11	11	13

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ECONOMY AND ENERGY

Many Muslim states share two of the following features: one, heavy reliance upon exports of natural resources and, two, a dependence on foreign labour force and know-how. Another important factor impacting the economies of many Muslim countries is energy, and while some Muslim countries have substantial oil reserves, market fluctuations and geopolitical dynamics have affected the income of many Muslim countries. Intricate systems tied in political tensions and financial balancing maintain and proliferate the oil market, but oil like other natural resources is finite and consumption rates are unsustainable. Added to that the horizon of alternative energy threatens OPEC's control of the market as supply falls. Figure 1 shows peak oil depletion scenarios over the next two decades. Once an oil field has passed its peak period it becomes harder to obtain oil from and will rapidly decline its output. With 95% of world transportation still dependent on oil, the world will have to turn away from the dried-up fields of the Gulf to fulfil its demands. While some are developing and investing in post-oil economic strategies, many continue to rely upon sources of income that are woefully unsustainable—both environmentally and economically.

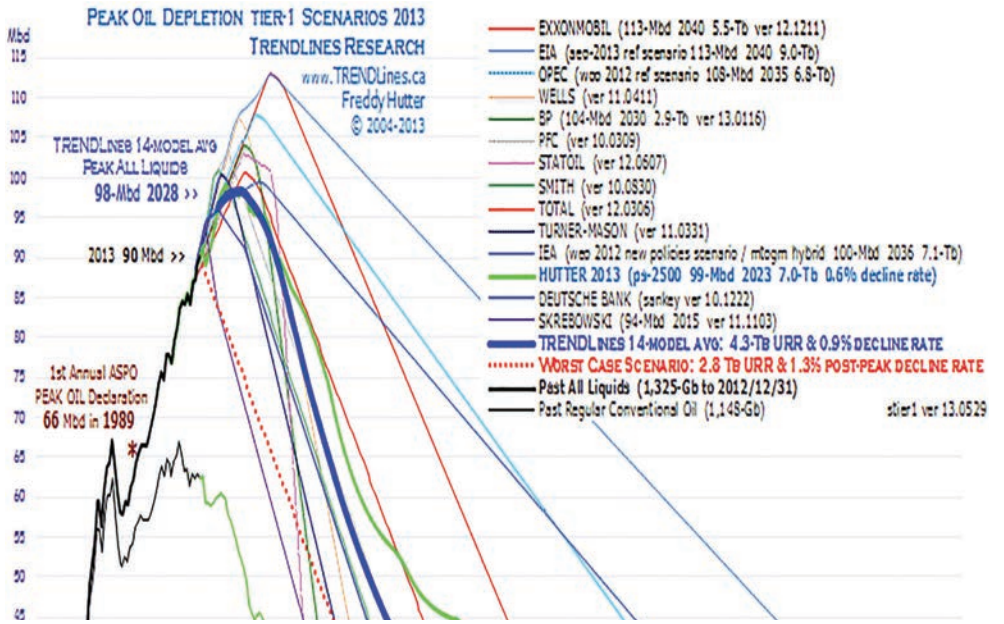

Figure 1: Peak Oil Depletion Scenarios

Economically, Muslim countries are too diverse to lump together. According to UNDP's 2014 Human Development report, Muslim countries are scattered along the Human Development Index (HDI). The HDI is a composite index that considers three issues: life expectancy (as an indicator of leading a healthy life), years of schooling (as an indicator of education level) and Gross National Income per capita (as an indicator of having a decent standard of living). In Table 1, one can see the HDI value score compared with Gross Domestic Income per capita (measured in 2011 Purchasing Parity Power US dollars) within Muslim countries.

Table 1: HDI Ranking for Muslim Countries

HDI rank		Human Development Index (HDI) Value 2013	Gross national income (GNI) per capita (2011 PPP$) 2013
Very high human development			
30	Brunei Darussalam	0,852	70.883
31	Qatar	0,851	119.029
34	Saudi Arabia	0,836	52.109
40	United Arab Emirates	0,827	58.068
44	Bahrain	0,815	32.072
46	Kuwait	0,814	85.820

HDI rank		Human Development Index (HDI) Value 2013	Gross national income (GNI) per capita (2011 PPP$) 2013
High human development			
55	Libya	0,784	21.666
56	Oman	0,783	42.191
62	Malaysia	0,773	21.824
65	Lebanon	0,765	16.263
69	Turkey	0,759	18.391
70	Kazakhstan	0,757	19.441
75	Iran (Islamic Republic of)	0,749	13.451
76	Azerbaijan	0,747	15.725
77	Jordan	0,745	11.337
84	The former Yugoslav Republic of Macedonia	0,732	11.745
86	Bosnia and Herzegovina	0,731	9.431
90	Tunisia	0,721	10.440
93	Algeria	0,717	12.555
95	Albania	0,716	9.225
Medium human development			
103	Turkmenistan	0,698	11.533
107	Palestine, State of	0,686	5.168
108	Indonesia	0,684	8.970
110	Egypt	0,682	10.400
118	Syrian Arab Republic	0,658	5.771
120	Iraq	0,642	14.007
125	Kyrgyzstan	0,628	3.021
129	Morocco	0,617	6.905
133	Tajikistan	0,607	2.424
142	Bangladesh	0,558	2.713
Low human development			
146	Pakistan	0,537	4.652
152	Nigeria	0,504	5.353
154	Yemen	0,500	3.945
159	Comoros	0,488	1.505
161	Mauritania	0,487	2.988
163	Senegal	0,485	2.169
166	Sudan	0,473	3.428

HDI rank		Human Development Index (HDI) Value 2013	Gross national income (GNI) per capita (2011 PPP$) 2013
169	Afghanistan	0,468	1.904
170	Djibouti	0,467	3.109
171	Cote d'Ivoire	0,452	2.774
172	Gambia	0,441	1.557
173	Ethiopia	0,435	1.303
176	Mali	0,407	1.499
177	Guinea-Bissau	0,396	1.090
179	Guinea	0,392	1.142
181	Burkina Faso	0,388	1.602
182	Eritrea	0,381	1.147
183	Sierra Leone	0,374	1.815
184	Chad	0,372	1.622
187	Niger	0,337	873

This data indicates that the wealth accumulated within Muslim countries is extremely unequal, and, perhaps most importantly, suggests that luxury might not equal better living. There is, however, an intermediate block (Medium HDI) that shows a steady progression, and it is worth noting the geographic diversity of this cohort, which draws from Central Asia, North Africa, Southeast Asia, and the Middle East.

Table 2: HDI Comparison World – Muslim Countries

Human Development Index Groups	Human Development Index (HDI) Value 2013		Gross national income (GNI) per capita (2011 PPP$) 2013	
	World	Muslim	World	Muslim
Very high human development	0.890	0.832	40.045,67	69.663,66
High human development	0.735	0.749	13.230,86	16.691,73
Medium human development	0.614	0.646	5.960,04	7.091,38
Low human development	0.493	0.439	2.903,52	2.273,83

The HDI comparison of Muslim countries (Table 2) illuminates one of the most sensitive features of the economies of Muslim countries: dependence on non-renewable resources, especially hydrocarbons and precious minerals. *The Resource Governance Index* (RGI) produced by the Revenue Watch Institute measures the quality of governance

in the oil, gas, and mining sectors of 58 countries. The RGI ranges from 100 (optimum governance) to 0 (extremely poor governance). Figure 2 shows the RGI rankings of Muslim countries.

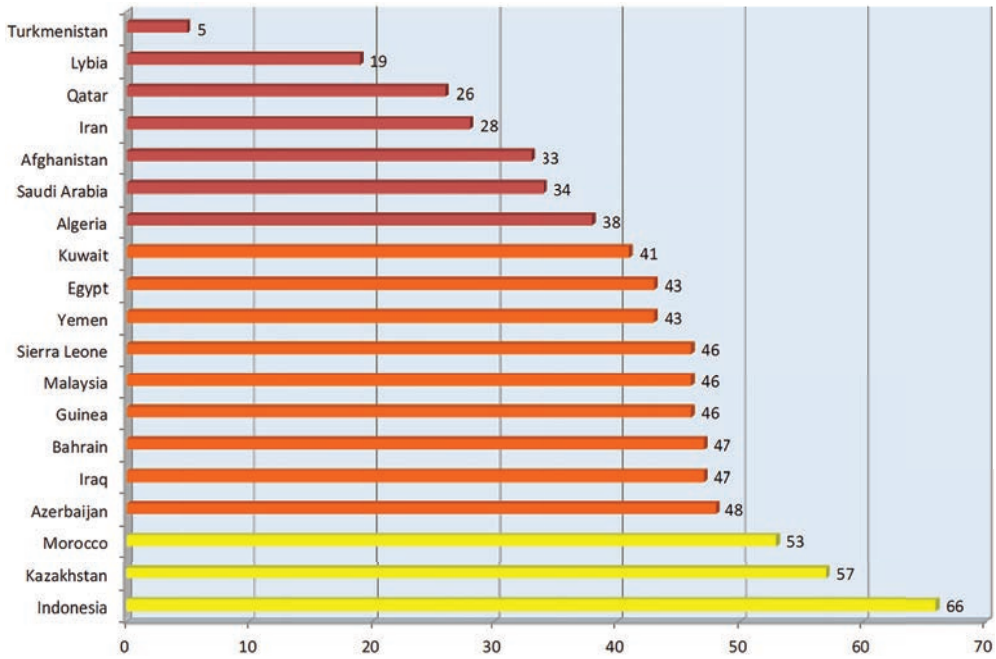

Figure 2: RGI for Muslims Countries

As we see in the RGI rankings, twelve Muslim countries only received partially satisfactory (three in yellow) and weak (nine in orange) while the remaining eight were placed in the failing category (red). No Muslim countries received a ranking in the optimal category, as is evidenced by the lack of green in the above figure. Given the strategic importance of these resources for many Muslim countries, there is much reason for concern. RGI considers four components:

- Institutional and legal setting (20% of RGI) – analyses the degree to which the laws, regulations and institutional arrangements facilitate transparency, accountability and open/fair competition.

- Reporting practices (40% of RGI) – analyses into the actual disclosure of information by government agencies. Because de facto disclosures are the best indicator of transparency, this component receives a greater weight.

- Safeguards and quality controls (20% of RGI) – analyses the presence and quality of checks and oversight mechanisms that encourage integrity and guard against conflicts of interest.

- Enabling environment (20% of RGI) – analyses the broader governance environment, based on more than 30 external measures of accountability, effectiveness, rule of law, corruption, and democracy.

The above data must be considered alongside concerns that some Muslim countries, most notably Saudi Arabia, may have intentionally over-estimated their energy reserves. In Table 3, one can see how Muslims countries rank in each component. While many Muslim countries received high rankings in the category of "Institutional and legal settings", the area of "Enabling environment" represents a shared challenge and speaks to broader concerns over political instability.

Table 3: RGI Composite and Components Score for Muslim Countries

Country	Resource	Composite score	Institutional and legal settings	Reporting practices	Safeguards and quality controls	Enabling environment
Indonesia	Hydrocarbons	66	76	66	75	46
Kazakhstan	Hydrocarbons	57	62	58	76	32
Morocco	Minerals	53	80	47	63	32
Azerbaijan	Hydrocarbons	48	57	54	51	24
Iraq	Hydrocarbons	47	57	52	63	9
Bahrain	Hydrocarbons	47	38	40	59	58
Guinea	Minerals	46	86	45	43	11
Malaysia	Hydrocarbons	46	39	45	39	60
Sierra Leone	Minerals	46	52	47	59	24
Yemen	Hydrocarbons	43	57	46	52	16
Egypt	Hydrocarbons	43	40	44	48	40
Kuwait	Hydrocarbons	41	28	43	36	57
Algeria	Hydrocarbons	38	57	41	28	26
Saudi Arabia	Hydrocarbons	34	30	35	31	38
Afghanistan	Minerals	33	63	29	38	8
South Sudan	Hydrocarbons	31	80	17	35	8
Iran	Hydrocarbons	28	26	33	26	23
Qatar	Hydrocarbons	26	15	14	20	66
Libya	Hydrocarbons	19	11	29	15	10
Turkmenistan	Hydrocarbons	5	13	4	0	3

While RGI is focused on Hydrocarbons and Minerals, one can and might extend the above dynamics to other natural resources, such as palm oil, rubber, and plywood, which are all important assets in Southeast Asia, and, despite being renewable, could become more scarce if unsustainable management practices and climate change continue to accelerate.

In spite of the above challenges, many Muslim countries are working hard to strengthen their economic strategies. While some are seeking pathways toward a post-oil economy, others are diversifying their productive capacity. However, very few Muslim countries are undergoing these transformations by developing their own knowledge capital. More wealthy countries have opted for buying what they need (technology, talent, and research), while the less wealthy rely instead on development projects funded by other countries.

Aside from a dependence on foreign talent, many high-income Muslim countries rely on sizable foreign labour forces primarily from Southeast Asia. The Kafala (Sponsorship) system was conceived in the 1950's as a mechanism to provide temporary, rotating labour that could be rapidly brought into the country in periods of economic growth and expelled during less affluent times. Kafala remains a habitual contracting method within the Gulf Cooperation Council (GCC) including Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates but also in the Arab states of Jordan and Lebanon. Questions surrounding Kafala's sustainability have emerged as concerns over labour practices and human rights abuses have come to light.

At present, there are three Muslim countries represented in the G20: Saudi Arabia, Turkey and Indonesia. While the Gulf monarchies, with the UAE and Qatar leading the way, are working to become strong service-driven economies, others, primarily Turkey and Indonesia, are instead focusing on diversified economic outputs with an emphasis on light and heavy industry. When looking at Muslim countries, one can see a variety of economic approaches—from capitalist to state-owned and planned—that reflect global development patterns, uncertainties, and best practices.

The combination of increased research in alternative energy sources and economic systems has been profoundly influenced by strategies from the West. One such technology that seeks to build a stable economic framework for Muslim countries begins with the simple technological development of the smartphone. Mobile banking is a service provided by banks and financial institutions that allows customers to conduct a range of financial services remotely via a smartphone, tablet, or other device. In 2015, the World Bank confirmed a 20% reduction of unbanked people around the world between 2011 and 2014. M-Pesa, mobile money, is another method for mobile financial services, launched by Vodafone in 2007. As of 2014 with its expansion into Eastern Europe and Afghanistan, Vodafone has become the most successful mobile-phone-based financial service in the Muslim world. As Wi-Fi brings the internet to areas with landline deficits, mobile banking/money brings financial services to places lacking banks. In 2009, the Bill and Melinda Gates Foundation partnered with GSM Association to launch Mobile Money for the Unbanked (MMU) that is providing reliable and affordable access to mobile services. Mobile banking/money provides for a more democratic and

fair platform for financial business in the Muslim world. The most active area in the world for mobile banking services is East Asia with significant account ownership increases in Indonesia. The Middle East carries a heavy potential where digitized private sector wages could cut the number of unbanked adults from 85million by 7%. Mobile services stand to change not only the financial services and economies of Muslim countries, but also provide an alternative financial system.

Shariah-compliant financial institutions and Islamic banking have now become entrenched in many Muslim countries. Over $2 trillion, 1% of global assets, are represented by these institutions; and this figure is set to rise considerably. While only a couple hundred Shariah-compliant financial institutions exist in the world today, we can expect the numbers to increase rapidly in the coming decades. In the UEA alone, Islamic banks are growing by 14-18% annually compared to the four to eight percent growth of conventional banks. Islamic finance is also slowly spreading in the West where it is seen as a feasible, ethical alternative to Western banking practices.

However, concern should be expressed about that fact that Islamic banking and finance institutions are invariably linked to Western financial, banking, and economic structures – that is, to capitalism, which is in a state of acute crisis. The global financial crisis of 2008 revealed the tip of the iceberg of this predicament. Capitalism is no stranger to rises and falls, but a danger exists in thinking that for every fall there is a rise. Current trends show that no rise is imminent, but another fall is close at hand due to technology, bitcoin and other bubbles in markets as well as current banking policy. Government assistance in this matter only seeks to perpetuate the system's fractures. These busts ripple out to affect the global economy and any type of Islamic system of finance or economics needs to understand the dangers inherent in the capitalist economic system.

Implications

- Very few Muslim countries are actively developing their own knowledge capital as a sustainable resource and less so as an export.
- Some of the wealthiest Muslim countries are engaging in the transition toward post-oil economies, but numerous uncertainties surround these efforts.
- Most Muslim countries are over-dependent on oil reserves to compensate for scarcity of basic resources.
- Many Muslim countries rely upon foreign labour—both skilled and unskilled—for a variety of jobs and services.
- Mobile services allow for the poorer and more remote elements of the Muslim population to partake in the overall economy. Increased access will play a role in the development of an Islamic financial system and wealth distribution equality in the future.
- Islamic financial institutions and banking may provide an alternative to Western capitalist economic system.

- Capitalism and the fragile global market pose a serious impediment towards the further development of Muslim countries as well as Islamic banking and financial systems. Innovation and investigation into the changing of economic and energy trends in the Muslim world is essential for surviving future economic bubbles, recession, and crashes.

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SCIENCE AND TECHNOLOGY

Science and technology is one of the most neglected areas in Muslim countries. With few exceptions, Muslim states are not investing in R&D or producing scientific and technological products and processes. At present, Iran and Turkey generate almost all of the scientific papers produced by Muslim countries, and Iran alone counts for more than half of all patents applications generated by Muslim countries. In addition to Turkey and Iran, only a handful of countries—Egypt, Malaysia, Pakistan, Saudi Arabia and Tunisia—cover almost entirely the scientific and technical output from Muslim countries.

Muslim countries rate poorly in almost every science and technology indicator. If one looks at R&D expenditure as a percentage of GDP, Muslim countries score quite low despite the presence of some wealthy states in their ranks.

Table 1: R&D Expenditure as % of GDP

	2011	2012
Muslim countries	0.3	0.4
World	2.1	2.2
High income	2.4	2.4
Middle income	1.2	1.4
Low income	-	-

Only Malaysia devotes more than 1% of its GDP (1.1 to be precise) to R&D, and only four countries (Mali, Morocco, Tunisia and Turkey) allocate more than 0.5% of their GDP to R&D. It is likely the case that the Muslim average is better than that of

low-income countries due to lack of data. Muslim countries rank below middle-income states, but there has been an improvement in recent years as indicated in Table 1.

Lack of R&D investment means that there are very few researchers per million people (Table 2). Information is only available for 16 countries from which two, Malaysia and Tunisia, are far above the curve with 1.467,1 and 1.266,2 researchers per million people respectively. After these two states only Turkey and Iran have significant figures with almost 800 researchers.

Table 2: Researchers in R&D (Per Million People)

	2010
Muslim countries	492,3
World	1.263,3
High income	3.559,6
Middle income	561,1
Low income	-

The contribution of Muslim countries in scientific journals relating to physics, biology, chemistry, mathematics, clinical medicine, engineering and technology, biomedical research, and earth and space sciences is highly disproportionate to their demographic weight and economic relevance (Table 3).

Table 3: Scientific and Technical Journal Articles Publication

	2011
Muslim countries	29.492,8
World	842.756,5
High income	669.491,1
Middle income	172.242,5
Low income	1.022,9

And, as with other indicators, the aggregated figures can be somewhat misleading. There is a substantial disproportion between the publishing ratios of the top seven countries and the rest, as can be seen in Table 4.

Table 4: Top Publishing Muslim Countries

	2011
Iran & Turkey	16.503,9
Egypt, Malaysia, Pakistan, Saudi Arabia & Tunisia	8.381,7
Total	24.885,6

Iran and Turkey have published 56% of the articles from Muslim countries. When one adds five other countries – Egypt, Malaysia, Pakistan, Saudi Arabia and Tunisia – this number reaches 84.4%. In other words, the remaining 47 countries only publish 15% of the scientific articles produced by Muslim countries.

Patent applications provide another valuable metric (Tables 5 & 6). At present, only four countries produce 88% of all patent applications from Muslim countries - which represents almost 1.6% of patent applications worldwide. Iran accounts for almost 57% of patent applications from Muslim countries - which represents almost 0.9% of patent applications worldwide. Clearly, embargoes have been a major incentive to make such an effort, but this does not hide the fact that the remaining 50 Muslim countries only amount to 12% of total applications.

Table 5: Patent Applications (Residents)

	2013
Muslim countries	20.281
World	1.291.089
High income	822.906
Middle income	460.184
Low income	-

Table 6: Top Patent Applying Muslim Countries

Leading countries	2013
Iran	11.529
Kazakhstan, Malaysia & Turkey	6.376
Total	17.905

Given all of the data, it is clear that the Muslim world lags seriously behind in science and technology. The data suggests that this is a deeply embedded trend. What this means is that Muslim countries will continue to be highly dependent on external know-how. Furthermore, there are no indications that this trend is being challenged and alternative models of local R&D are being designed, developed, and promoted.

The lack of focus on science and technology is deeply ironic, if not tragic, given the contribution of the classical Muslim civilization to science and technology. A Google search on 'Muslim science & technology' will direct you to the contribution of classical Muslim scientists in fields such as mathematics, medicine, physics and astronomy – but provides virtually no references to present day activity.

Implications

- There is a widening science and technology knowledge gap between Muslim countries and industrialised states as well as between a handful of Muslim countries which produce scientific and technological outputs and the rest of Muslim states.

- The present situation does little to dispel the notion that Islam is anti-scientific and anti-technology; and enforces dependency on external sources of scientific knowledge.

- The low levels of R&D in most of the Muslim world will also make it harder for them to diversify their economic performance. Currently, most of the Muslim economic activity is located in the primary sector. Without a significant investment in R&D and innovation, it is likely that most of those countries will have little alternatives but to resort to low added value activities such as tourism.

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ARMED CONFLICTS AND TERRORISM

Muslims are significantly more affected by armed conflicts than any other religious group. Muslim countries and communities are impacted by nine of the world's 15 longest military conflicts. Of the 15 ongoing armed conflicts with the highest casualty counts, 14 are between or with Muslim countries or groups, which means that Islam is also the religion with the largest number of believers killed as a consequence of armed conflict. In terms of military burden, military expenditures as a share of GDP, 14 of the top 20 countries globally are predominantly Muslim. Although there is no generally recognized figure for what constitutes a high military burden, the 4% threshold is consistently represented as the top quintile of military burdens for over 20 years. Additionally, nearly 19,000 people have died within Muslim countries because of terrorism since the 1980's.

According to the International Committee of the Red Cross (ICRC), 'an armed conflict exists whenever there is a resort to armed force between States, (…) between governmental armed forces and non-governmental armed groups or between such groups only'. Two criteria should be met before a clash can be declared as armed conflict: 'First, the hostilities must reach a minimum level of intensity. This may be the case, for example, … when the government is obliged to use military force… instead of mere police forces'; and 'second, non-governmental groups involved in the conflict must be considered as "parties to the conflict", meaning that they possess organized armed forces'.

Following this definition, there is little doubt that Muslim communities are currently most plagued by armed conflicts. Table 1 shows the cumulative fatalities in ongoing conflicts. Given the inherent difficulties tracking these situations, the real numbers are probably much higher.

Islam is frequently invoked in every kind of conflict, whether a territorial dispute, border

contentions, insurgence groups, civil war, ethnic and/or religions strife, terrorism and, as is frequently the case, a deadly combination of all these issues.

One further indicator to note is military expenditure. According to SIPRI Military Expenditure Database, if we take into account the share of a country GDP devoted to military expenditure, taking the 4% as the criteria to identify those with 'Military Burden', Muslim countries come on top. If we measure the average expenditure between 2011 and 2016, 8 of the top spenders are Muslim, as we can see them in Figure 1. Only Israel (5.8%) and Russia (4.4%) break the Muslim dominance in this ranking. It is worth noting that there is no reliable data about some countries, such as Syria, Libya or Yemen, but given their situation they are very likely candidates to be here as well.

Table 1: Cumulative Casualties of 10 Main Ongoing Armed Conflicts Affecting Muslims

Conflict	Starting year	Location	Accumulated casualties	Deaths in 2015
War in Afghanistan	1978	Afghanistan	1.240.000 – 2.000.000	34.475
Iraq War	2003	Iraq	224.000 – 1.000.000	20.023
Boko Haram Insurgency	2009	Nigeria Cameroon Niger Chad	20.700	10.882
Syrian Civil War	2011	Syria	220.000 – 340.000	50.373
Israeli–Palestinian conflict	1964	Israel Palestine	24.000	163
Turkey–PKK conflict	1984	Turkey Iraq	45.000	1.131 – 2.174
Somali Civil War	1991	Somalia Kenya	500.000	3.724
Communal conflicts in Nigeria	1998	Nigeria	16.018	839
War in Darfur	2003	Sudan	178.363	1.1.39
War in North-West Pakistan	2004	Pakistan	59.577	3.565

It goes without saying that Muslim societies are also plagued with terrorism. Since 1980, 410 terrorist attacks have been recorded in Muslim countries, and they have jointly caused 18,682 deaths and injured 33,140 people. What is most concerning is the recent progression of attacks. As shown in Table 2 below, the growth of terror attacks has been

quite dramatic. In the 1980's, there were only eight attacks leaving 453 dead persons and 277 injured. There was a substantial rise during the 1990's, with almost four times more attacks, twice as many killed and more than 20 times more injuries.

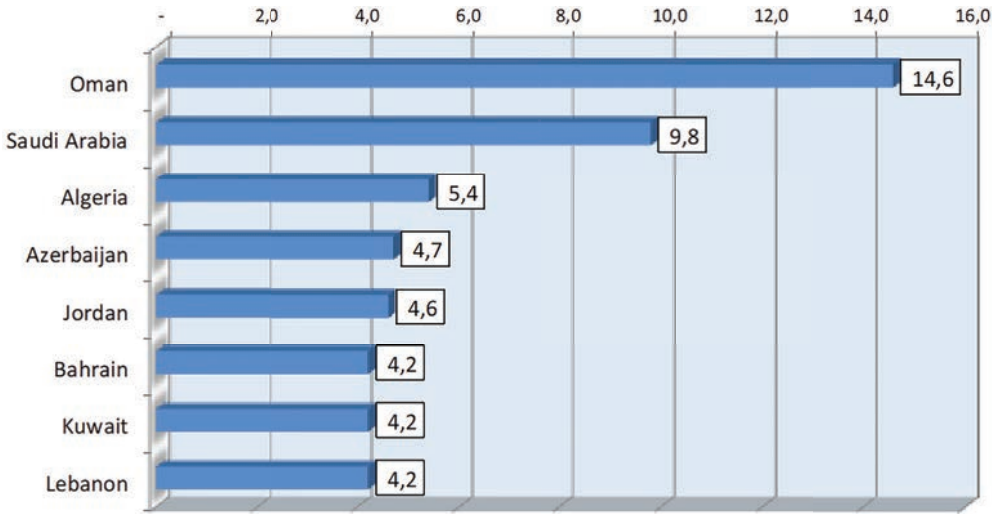

Figure 1: Muslim Countries With a Greater Share of Its GCP Devoted to Military Expenditure (Average Percentage Between 2011 and 2016)

Table 2: Evolution of Islamist Terrorism

	Attacks	Dead	Injured
1980-89	8	453	277
1990-99	31	977	7.560
2000-09	152	7.269	13.203
2010-15	219	9.983	12.100

The last two decades, however, has been the bloodiest with more than 150 attacks leaving 7,000 dead and slightly over 13,000 injured. Many consider 9/11, which killed 3,000, to be the starting point for the acceleration of this trend, but the acceleration in the trend during the following decade has much to do with the emergence of groups like Daeish and Boko Haram.

Implications

- Armed conflicts inflict a severe toll in Muslim countries by draining resources and preventing the attainment of higher standards of living.
- Muslim identity and Islamic theology have been co-opted by war rhetoric and logic, and radical 'Islamic terrorism' worsens this situation even more.
- War reinforces negative economic and political trends driving off the possibility of societal improvement.
- Terrorism compounds and complicates contemporary warfare as it spreads fear, reduces non-violent solutions, and delegitimizes Muslim organisations and groups seeking political power.

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CYBERATTACKS AND CYBERWARS

To truly understand the trends associated with cyberattacks and cyberwars, one must understand the basics of cyberspace. It is a new map. While wars and conquests are played out on the physical Earth, cyber-foul play happens in an entirely new (virtual) space. There are no national borders, governments, or laws in the political sense. Cyberspace is comprised of transactions of information from one computer to another. It exists on the basic principle of trust and an attack occurs when a third party enters the transaction, interfering in some way. Various forms of malware can be used to attack persons, groups, corporations, and governments. Communities of hackers and viruses can work simply to achieve one goal or even, potentially, launch a cyberwar. This issue is compounded with the rise of unmanned military weapons such as drones and advancements in robotics. Warfare in the next decade will continue to evolve into something that has not been seen before. Robot/drone wars and wars in cyberspace are the next frontier in issues of defence and will take place on a whole new map with new rules that requires the attention of the Muslim countries since casualties will not only be that of livelihoods but also the stability of infrastructures that affect and shape daily life.

The notion of cyberattacks covers a variety of offensive manoeuvres deployed by individuals or organizations against computer information systems, infrastructures, computer networks, and/or personal computer devices with the intention of altering or destroying a specific target. The global playing field has been levelled. Even small players who are not highly developed can tap into this brand of aggression; an individual is just as powerful as a state.

In 2016, on average, over 200,000 malware cyberattacks occurred per day. One of the most notable victims was Bangladesh Central Bank which was attacked on 4 February. Over the weekend, $81 million were stolen. The attack would have gone unnoticed had

it not been for the spotting of a small typo, the spelling of foundation as 'faundation', and the hackers could have stolen around $1 billion. Bangladesh is ranked number 19 in most cyber attacked countries by the internet security firm Kaspersky. As Table 1 shows, the top most attacked countries are Indonesia, Iran and Turkey.

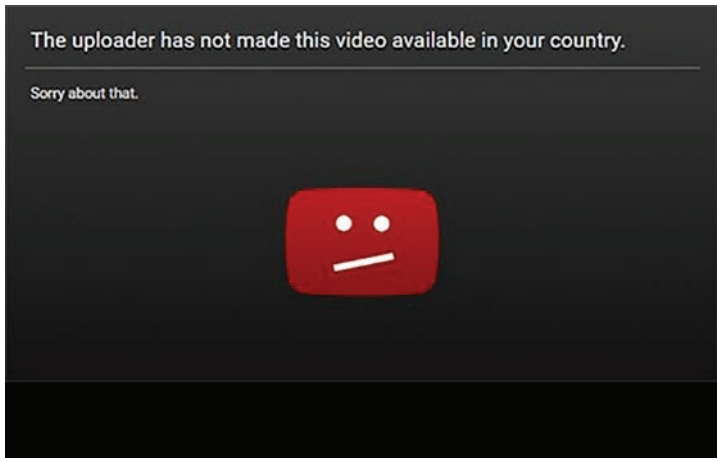
Table 1: Muslim Countries on Kaspersky Most Cyberattacked Countries

#12	Indonesia
#13	Iran
#16	Turkey
#19	Bangladesh
#22	Algeria
#25	Saudi Arabia
#26	Malaysia
#27	United Arab Emirates
#37	Egypt
#44	Pakistan
#50	Jordan

But it is not just foreign attackers that pose a threat. The fragility of the internet means that a state can sabotage its own system. A good example is provided by a 2008 accident in Pakistan. The Pakistani government ordered Pakistan Telecom to block what it deemed as a source of offensive material, the video sharing site, Youtube. To do this Pakistan Telecom set out to misdirect Pakistani internet users towards a dummy webpage. The internet acts as a dynamic operator connecting computers to routers based on IP addresses. When Pakistani internet users attempted to go to Youtube.com, their computer's search for that IP was directed towards a fake router claiming to have the IP address for Youtube.com. The problem was that when Pakistan Telecom did this, they actually created a fake router for two thirds of the world's internet users. This was compounded by the fact that the fake location was within Pakistan Telecom's servers. Thus, not only had they blocked Youtube, they were directing a lot of the world's traffic into their own servers which were quickly overloaded and crashed!

Cyberattacks pale in comparison to the potential of cyberweapons. The first major cyberweapon, Stuxnet, was employed against Iran. It began as a simple computer worm planted on a flashdrive that was left in the parking lot of Iran's nuclear enrichment plants, Natanz. When the flashdrive was picked up and put into one of the computers connected to Natanz's network, the worm moved to infect all Windows computers and was specified to target the computer programs that ran the centrifuges in the facility. The worm was effectively able to cease the system and halt Iran's nuclear program. Speculation

points to American or Israeli intelligence being responsible for the attack. Though the worm only worked on the specific software at the Natanz facility, traces of the worm were discovered on other Windows computers in Iran, Indonesia, and Pakistan.



Blocked!

Substantial rise in the use of drones and other unmanned equipment capable of surveillance and targeted killing shows a new approach to war. Robot troops on the ground are already being used: US troops have shown affection for a robot that travelled ahead of them to spot and trigger roadside bombs. The next step is Killer Robots, the common label for fully autonomous weapon systems or, more appropriately, Lethal Autonomous Weapon Systems (LAWS). LAWS are able to identify and select a target, adjust their behaviour if necessary, and deploy force without any human intervention. LAWS development represents an estimated market of $20 billion; over 40 countries, including US, China, India and Israel, have already begun research into the automation of warfare. The fear of loss of control to autonomous war systems has motivated British physicist, Stephen Hawking, and Elon Musk, the American technology entrepreneur, to call for a UN ban on LAWS.

Deterrence-value will be similar to the policy of today's mutually assured destruction with nuclear arms. While LAWS can be programmed to follow laws of war, they can just as easily be bypassed through a few lines of code. Responsibility, emotion, and memory will be lacking in weapons devoid of human intervention. Killer robots can potentially be quite popular among states as they reduce the cost of lives in times of war. Economically these systems, if produced in a scale economy frame, may be quite cheap. Some have already started labelling them the Kalashnikovs of tomorrow. It is likely that most of their victims will be Muslims.

Implications

- Muslim countries face increasing threats of cyberattack and cyberwar.
- To meet this challenge, they need to devote resources to produce trained and skilled manpower, enhance computer literacy, and create new institutions focussed on cyber education and cybersecurity.
- Due to the high volume of conflicts in general, and those involving Western forces, Muslim countries are likely to be targets for the testing of new cyberwar devices and technologies such as LAWS.
- Muslim communities need to begin discussing legal and ethical impacts of the rise of robots/drones, the cyberage, and AI; and embed these discussions within a more thorough understanding of human rights and dignity.

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EDUCATION AND CREATIVITY

A great on-going debate already exists on how to reform and implement education in Muslim societies in an increasingly inter-connected, complex and globalised world. The challenges faced by such an endeavour are formidable given the current education trends in Muslim countries.

In Figure 1, one can see adult literacy rates for OIC member states in comparison to the world average of developed and developing countries.

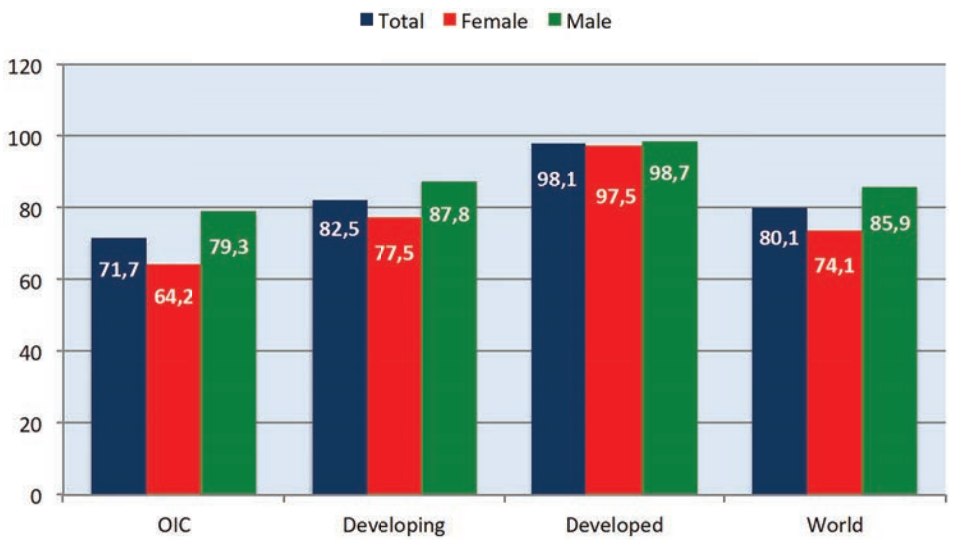

Figure 1: Literacy Rates (Percentage From Total Adult Population)

On average, Muslim countries rate worse than the mean of developing countries and also the rest of the world. Considering that OIC members include countries with high Gross Domestic Income, it should come as a surprise that OIC states score so low. The data provides additional insight. Table 1 presents literacy rates compared by Human Development Groups as well as age.

Table 1: Literacy Rates Comparison World – Muslim Countries

Human Development Groups	Literacy rates			
	Adult (% aged 15 and above) 2005-2012		Youth (% aged 15-24) 2005-2012	
	World	Muslim	World	Muslim
Very high human development	98.5	92.9	99.6	97.7
High human development	94.2	91.3	98.9	98.4
Medium human development	71.7	84.8	85.9	92.5
Low human development	58.2	49.6	70.2	63.8

A cursory glance reveals the need for improvement is self-evident. But on closer examination it becomes clear that the Muslim youth column not only shows better results than adults, but, in a few cases, some are better than the world average. This suggests that future generations will have a significantly lower illiteracy rate. Table 2 examines years of schooling (for male and female), population with at least some secondary education, and the GDP percentage outlay on education. We can see that many countries in the low human development group are making substantial efforts to improve education. And only the top group, very high on human development index, is systematically below the world average. Clearly, wealth does not equal welfare or necessarily improve educational achievements. Moreover, improving educational performance does not necessarily imply that better results are achieved. If one examines the 2012 PISA ranking, of the few worldwide indicators for primary and secondary education, only 3 Muslim countries appear: Turkey (44th position), United Arab Emirates (48) and Kazakhstan (49). Although PISA rankings needs to be contextualized, as its measures are decidedly Western.

Table 2: Human Development Groups Educational Data

Human Development Groups	Mean years of schooling (years)				Population with some secondary education		Expenditure on education	
	Female 2002-2012		Male 2000-2012		(% aged 25 and above) 2005-2012		(% of GDP) 2005-2012	
	World	Muslim	World	Muslim	World	Muslim	World	Muslim
Very high human development	11.6	9.0	11.8	8.6	86.9	64.6	5.3	3.6
High human development	7.5	8.0	8.5	9.1	64.9	61.7	4.6	3.8
Medium human development	4.7	6.5	6.4	7.7	47.5	51.3	3.7	4.1
Low human development	3.1	2.0	5.1	3.9	21.0	14.8	3.7	4.3

Additional results for higher education show the dire state within many Muslim countries. In Figure 2 and Table 3, we have aggregated rankings from the *Scientific American* list of the best countries on science; rankings provided by SJR, specifically all rated disciplines, engineering, computer science, social sciences, and arts and humanities and a listing based on research and development spending. This data raises several points of interest:

- Turkey is the only country that appears in all rankings, including 5 scores in the top 20.
- There is only one country from the very high development group, Saudi Arabia.
- Malaysia and Iran appear throughout the rankings. In the case of Iran, embargoes may have been a powerful incentive to develop an internal focus on science education.
- Across the spectrum, there seems to be a preference for scientific education over humanities or social sciences.

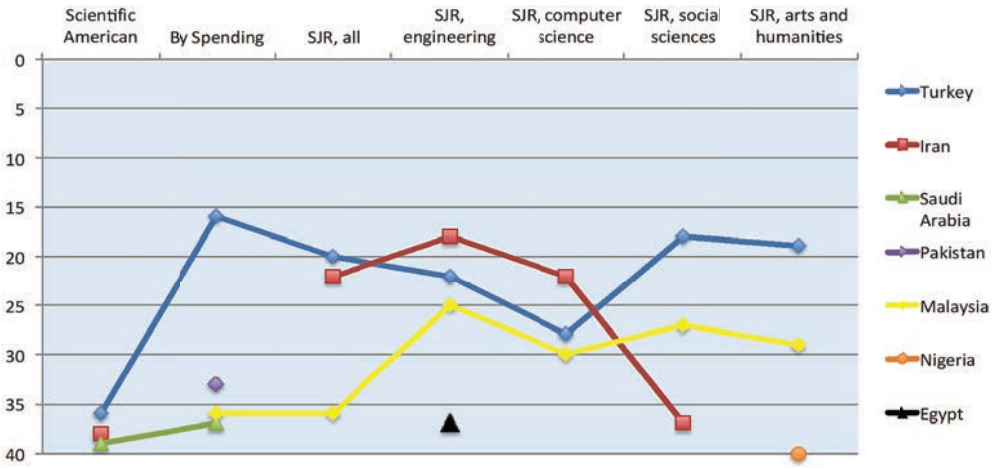

Figure 2: Mixed Ranking on Research Achievements

Table 3: Mixed Ranking on Research Achievements

Muslim countries in the top 40 ranking	Scientific American	By Spending	SJR, all	SJR, engineering	SJR, computer science	SJR, social sciences	SJR, arts and humanities
Turkey	36	16	20	22	28	18	19
Iran	38		22	18	22	37	
Saudi Arabia	39	37					
Pakistan		33					
Malaysia		36	36	25	30	27	29
Nigeria							40
Egypt				37			

All of which suggests that education in the Muslim world is in dire shape. It is in urgently need of overhaul with more attention given to humanities and social science, requires a much greater proportion of national resources, and, in the final analysis, quite radical reforms.

Education is closely linked to the creative output of a society. Creativity itself, as defined by the Martin Prosperity Institute's Global Creativity Index (GCI), is 'closely connected to the economic development, competitiveness, and prosperity of nation'. Figure 3 presents the map of the Global Creativity Index (GCI) and Table 4 shows the rankings for Muslim countries. Iran tops the list of creativity, ranked 57 out of 139 listed countries, with 19 Muslim countries located in the bottom quarter.

However, the situation, and hence trends in creativity, may not be as bad as suggested by this data. The GCI not only links creativity to the developed status of a country but also to urbanisation. Which means less developed countries, with large rural populations, are relegated to lower ranks by definition. Hence, the strange anomaly: Saudi Arabia is ranked much higher in creativity than Pakistan or Indonesia – both countries with thriving cultural and creative societies. The problem is that trends in creativity cannot be pinned down simply because Muslim countries themselves do not provide any viable data.

However, we can safely say that Muslim societies have rich cultures and a high potential for creative output. Natural talent has produced thriving film, television, and music industries in Pakistan, Iran, Turkey, Egypt, and Mali to name a few. Yet, we can also equally safely assert that no educational and institutional structures exist to cultivate and house this talent or allow it to excel and take the quantum leap to the next level where it can have global influence.

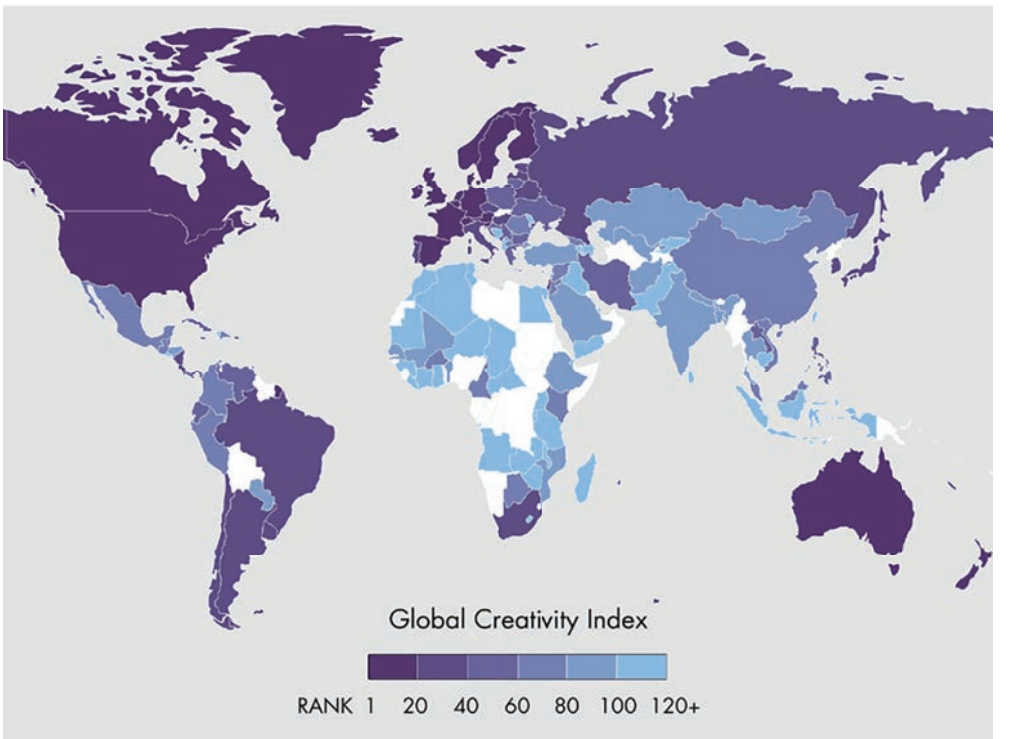

Figure 3: The GCI Map

Table 4: The GCI for Muslim Countries

Rank	Country	Technology	Talent	Tolerance	GCI
57	Iran	-	71	72	0,481
63	Malaysia	24	69	101	0,455
74	Macedonia	76	63	70	0,391
75	Syrian Arab Republic	-	85	84	0,382
75	Burkina Faso	-	122	46	0,382
78	Jordan	37	63	127	0,380
83	Saudi Arabia	50	59	122	0,362
84	Kazakhstan	72	54	98	0,357
85	Senegal	—	112	64	0.355
86	Kuwait	108	—	39	0.351
87	Afghanistan	—	124	54	0.349
88	Turkey	58	53	123	0.348
89	Mali	—	114	64	0.347
94	Lebanon	—	55	132	0.317
95	Bangladesh	90	101	43	0.316
98	Ethiopia	103	95	42	0.295
102	Algeria	68	77	116	0.279
104	Tunisia	—	72	131	0.260
107	Qatar	58	122	—	0.255
108	Bosnia and Herzegovina	77	70	119	0.253
110	Azerbaijan	98	78	92	0.244
111	Pakistan	100	110	54	0.240
111	Kyrgyz Republic	100	74	94	0.240
114	Tajikistan	106	90	85	0.205
115	Indonesia	67	108	115	0.202
116	Albania	83	90	118	0.197
118	Egypt	93	66	134	0.196
119	Niger	—	132	89	0.185
120	Morocco	78	98	120	0.178
122	Cote d'Ivoire	94	115	89	0.171
123	Chad	—	130	95	0.170
130	Guinea	—	126	111	0.124
132	Yemen	86	106	135	0.112
135	Mauritania	—	119	126	0.095
135	Djibouti	—	120	125	0.095
139	Iraq	110	—	130	0.032

Implications

- While literacy in Muslim societies is improving in relative terms, a great deal of attention needs to be paid to primary and secondary education to sustain and improve the trends.
- Higher education needs urgent reforms to overcome the knowledge deficit faced by Muslim societies.
- Education in social sciences and humanities needs to be enhanced and science and technology education needs to be taught more critically.
- Ultimately, failure to develop a robust, future oriented educational system would consign Muslim countries to the bottom of the heap.

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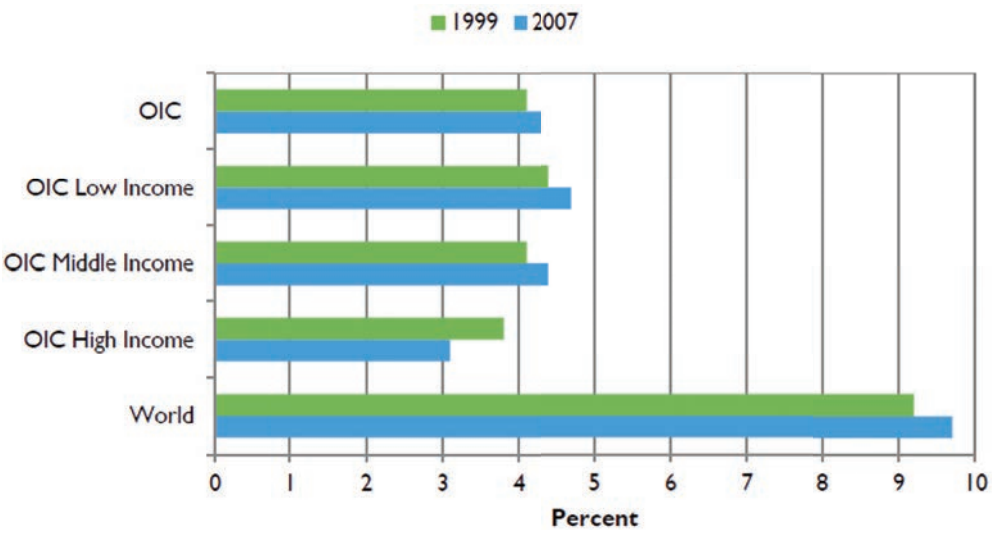
HEALTH AND WELLBEING

According to some indicators, Muslims, as a generic group, suffer from worse sanitation and wellness conditions in comparison to the world's average. However, and as we have seen in other trends, there is a hidden pattern here. The richest and the poorest Muslim countries are those that show the lowest rankings, while the countries in the middle level of wealth and development show better performance than the world's average. As dietary and medical advancements are creating higher standards for global health, wellbeing is also becoming an important concern due to greater social awareness and the innovative potential to improve it.

A good starting point for judging a country's level of healthcare development is the percent of GDP contributed to that sector. The Organisation of Islamic Cooperation (OIC) provides a good breakdown of GDP spending while comparing Muslim countries to the rest of the world (Figure 1). The OIC statistics are only up to 2008, but this gives us a good snapshot of Muslim societies prior to the tumultuous period between the Arab Spring (2011) and the Syrian Civil War (2011-). They suggest that the overall health indicators were improving slowly across the Muslim world until 2008; but as the more recent UNDP data (Table 1) show the trend took a downwards turn with the conflicts in Iraq and Syria.

The UNDP categorisation of countries is slightly different from the OIC's simple high, medium, and low average income categories. The UNDP adds another category to account for a wide gap between Very High, High, Medium, and Low average household incomes in Muslim countries. The UNDP data reveals that relatively low amounts of GDP were contributed to healthcare and the contributions made are drastically lower than the rest of the world.



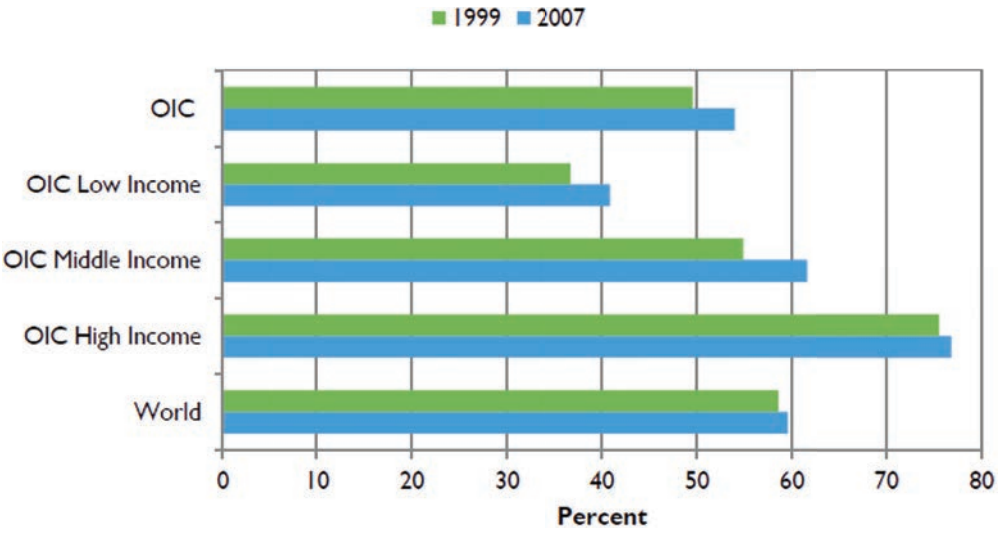
Source: SESRIC (BASEIND)

Figure 1: Average Total Healthcare Expenditure as % of GDP (1999-2007)

Table 1: Average Total Healthcare Expenditure as % of GDP (2011)

Human Development Groups	Health expenditure (as % of GDP) 2011	
	World	Muslim
Very high	12.19	2.98
High	6.00	5.63
Medium	4.60	4.98
Low	5.16	6.60
World	10.05	5.05

Figure 2, again from the OIC Statistical Commission, shows that Muslim countries, in general, were dependent on private funding for their healthcare sectors. Throughout the noughties, the global trend was to shift towards greater public spending on healthcare. Muslim countries, however, moved in the opposite direction, depending more and more on private funding. This indicates a healthcare system not just dependent on private incomes but also largely on foreign aid.



Source: SESRIC (BASEIND)

Figure 2: Average Private Healthcare Expenditure as % of Total (1999-2007)

While the statistics thus far paint a dismal picture for healthcare in Muslim countries, an alternative outlook is provided by life expectancy figures (Table 2), which are close to, and at time surpassing, the global average on all average income levels in the Muslim world.

Table 2: Life Expectancy at Birth (in Years)

Human Development Index Groups	Life expectancy at birth	
	World	Muslim
Very high	80.21	76.69
High	74.49	74.51
Medium	67.90	69.93
Low	59.36	58.87
World	70.80	70.00

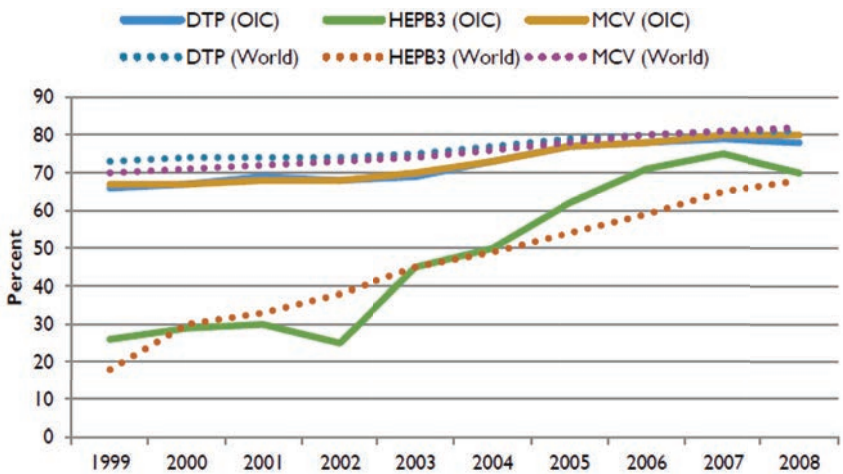
Likewise, the number of trained professionals seems to be competitive with global averages. Table 3, gives the ratio of trained physicians per 10,000 people. Due to the high wealth held in some Muslim countries, one might expect the ratio to be higher. Several factors can contribute to this ranging from the social status of medical professions in a given society, to the brain drain of trained professionals to Europe and the US.

Table 3: Ratio of Physicians Per 10000 People

Human Development Groups	Physicians (per 10000 people) 2003-2012	
	World	Muslim
Very high	27.80	17.11
High	17.17	20.25
Medium	7.41	14.47
Low	2.79	1.46
World	13.44	13.32

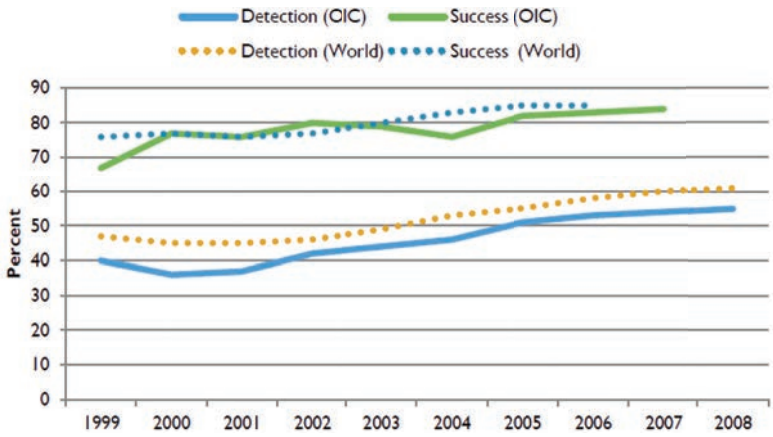
Figures 3 and 4 provide further evidence that healthcare in Muslim societies is competitive with the rest of the world in the areas of preventative care and education. The immunisation of one-year-olds shown in Figure 3, indicates a social acceptance of vaccines and proper public education in preventative care tactics. Figure 4 backs up this claim with successful detection and treatment of tuberculosis.

The combined OIC and UNDP data presents a relatively positive outlook of the state of healthcare in Muslim countries. It is on the cusp of moving from more developing focused healthcare structures to more sophisticated and globally competitive infrastructures. The new focus for healthcare providers in Muslim societies is to move from survival to quality in later life. As populations live longer, the threat of chronic diseases needs greater attention. Preventative care and dietary expertise will be needed as the large youth population begins to age.



Source: SESRIC (BASEIND)

Figure 3: One-Year-Olds Immunized with DTP3, HEPB3, and MCV (1999-2008)



Source: SESRIC (BASEIND)

Figure 4: Tuberculosis Detection and Treatment Success Rates (1999-2008)

However, there are three trends that present serious future threats. Obesity rates are escalating in a number of Muslim states. In Figure 5, obesity rates between 1999 and 2003 are compared between countries on a global scale. Here we see that the noughties have changed the presumption that obesity only exists in the West. Many Muslim countries, especially those of the oil rich Gulf States like Qatar, Kuwait, Saudi Arabia, Bahrain, and the UAE, have surpassed US, Australia, and the countries within Europe. In states like Qatar over half of the women are classified as obese. In contrast, birth defects are also emerging as a new trend. While accurate figures are not available, it is estimated in 2006, that over 1% of newborns in the Muslim world had severe birth defects. We would expect this figure to have risen considerably as the result of wars in Iraq, Syria, Yemen and Afghanistan – where dietary and sanitation deficiencies prevail, and where folic acid, iron, and iodine are not easily accessible.

Highest obesity Men, % of total population		
1	Lebanon	36.3
2	Qatar	34.6
3	Kuwait	32.8
4	Panama	27.9
5	United States	27.7
6	Cyprus	26.6
7	Saudi Arabia	26.4

Highest obesity Women, % of total population		
1	Qatar	45.3
2	Saudi Arabia	44.0
3	West Bank and Gaza	42.5
4	Lebanon	38.3
5	Panama	36.1
6	Albania	35.6
7	Bahrain	34.1

Figure 5: Global Comparison of Obesity Rates Between 1999 and 2003

	Highest obesity Men, % of total population			Highest obesity Women, % of total population	
8	West Bank and Gaza	23.9	8	United States	34.0
9	Bahrain	23.3	9	Egypt	32.4
10	Albania	22.8	10	United Arab Emirates	31.4
11	England	22.7	11	Iran	30.0
12	Germany	22.5	12	Kuwait	29.9
13	Scotland	22.3	13	Turkey	29.4
14	Ireland	20.1	14	Mexico	29.0
15	Israel	19.9	15	Scotland	26.0
16	Mexico	19.4	16	Israel	25.7
17	Australia	19.3	17	Mongolia	24.6
18	United Arab Emirates	17.1	18	Jamaica	23.9
19	Wales	17.0	19	England	23.8
20	Oman	16.7	20	Cyprus	23.7

Figure 5 (Continued): Global Comparison of Obesity Rates Between 1999 and 2003

A stigma also exists in Muslim societies in their attitudes towards mental health. The handling of mental health as simply an issue of an individual's strength and not as a disease can be very detrimental to a society. Considering the frequency of armed conflict and displaced persons occurring in Muslim countries, mental health will need to be given emphasis in the future. It is also a major contributor towards wellbeing which is rapidly becoming an important factor in global healthcare systems.

Table 4 provides an overall satisfaction index as determined by the UNDP. To do this, they examined the satisfaction of citizens on the quality of their education, healthcare, standard of living, employment, public safety, and freedom of choice. Table 5 provides a greater breakdown of these individual factors.

Table 4: Overall Satisfaction Index

Human Development Index Groups	Overall life satisfaction index (0, least satisfied, 10, most satisfied) 2007-2012	
	World	Muslim
Very high	6.59	6.32
High	5.49	5.28
Medium	4.79	4.82
Low	4.62	4.18
World	5.32	5.15

Table 5: Perceptions of Individual Wellbeing

Human Development Groups	Education quality (% satisfied) 2012		Health care quality (% satisfied) 2008-2012		Standard of living (% satisfied) 2007-2013		Job (% satisfied) 2007-2012		Safety (% answering yes) 2007-2012		Freedom of choice (% satisfied) 2007-2012	
	World	Muslim	World	Muslim	World	Muslim	World	Muslim	World	Muslim	World	Muslim
Very high	63.40	73.40	71.72	72.00	72.47	80.40	84.13	87.00	72.02	79.75	77.44	78.60
High	60.46	58.23	57.52	52.00	57.00	56.00	73.83	69.71	68.38	62.15	72.72	61.64
Medium	70.79	63.00	54.30	54.18	58.66	63.64	70.82	72.82	64.60	66.73	61.91	59.64
Low	51.58	44.50	41.57	33.92	37.46	39.23	63.96	62.85	54.65	58.54	56.23	58.54
World	63.50	59.78	56.51	53.03	56.40	59.82	73.71	73.09	65.72	66.79	67.56	64.60

Implications

- Clearly, the depiction of the Muslim world as struggling and malnourished is not correct. Collectively, Muslim countries are on the brink of a major transition from the developing to the developed status in terms of healthcare.
- Unfortunately, the current methods for healthcare allocation are characteristic of developing countries. A low amount of GDP is contributed to healthcare and the overall healthcare budget is largely dependent on private and foreign contributions.
- The biggest healthcare issue that Muslim societies will face in the near future is mental health – a product not just of conflict and displacement, but also of a young population suffering from unemployment and alienation.
- Lack of focus in science and technology stands as a major impediment to Muslim healthcare, but new advancements in technology and greater interconnectivity of cultures represents an opportunity for Muslim societies.

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GENDER INEQUALITY

Saudi women captured the headlines in 2017. They were granted the right to vote in municipal elections, compete in Olympic sports, and allowed to obtain a driver's license and drive without permission from their 'guardians'. The streak continued in 2018 as Saudi women, for the first time, were allowed to attend football matches at stadiums. The trend for Muslim women closely follows the development in Saudi Arabia: the data suggests that the situation for women is improving in most Muslim countries.

Given the misconceptions and misinformation about Muslim women, data from the United Nations Human Development Program (UNDP) offers a less biased lens to examine the plight of women in Muslim countries. UNDP has developed indicators on gender-related issues. The Gender Inequality Index (GII) combines data for three main dimensions: health, empowerment, and labour market. If one compares the GII of Muslim countries to states within the same Human Development Index (HDI) group, one can see that Muslim countries, on the whole, rate worse than the world average (Figure 1). However, in some groups the gap widens. Thus, the worse ones are the Low and the Very High segments, with 174 and 129 points of difference respectively; the Medium and High blocks are better with just 53 and 7 points difference. The score of the Muslim High group is remarkable, not only is it the closest to the world average but also better than the Very High one. The greater wealth of the Muslims Very High group does not translate into a more widespread improvement in the quality of life of their whole population. Authoritarian monarchies are the predominant type of government in the Very High HDI group. This explains their low score regarding female empowerment as this variable uses as an indicator the male to female shares of parliamentary seats.

All of this suggests that gender inequalities are clearly a greater challenge in Muslim countries, with few exceptions, than the rest of the world. Yet, there have been improvements over the past few years. In Table 1, two countries from every HDI group (those

closest to the Muslim average in 2015) are charted from 2000 to 2013 (when data is available). All countries have improved their scores, some modestly such as Sierra Leone and Saudi Arabia, while other quite spectacularly like United Arab Emirates.

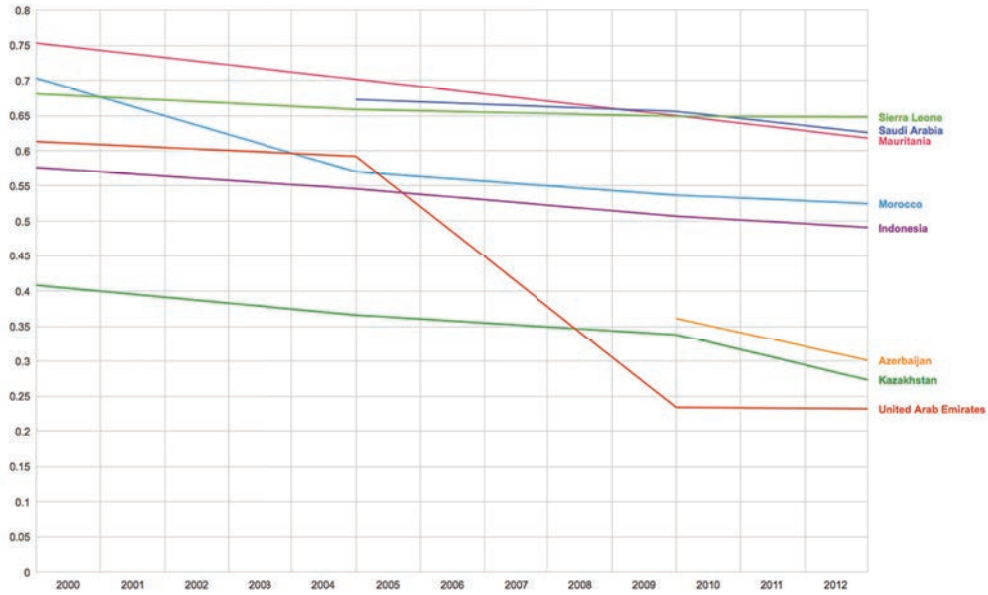

Figure 1: GII Evolution of Some Muslim Countries

Table 1: GII Comparison World – Muslim Countries

Human Development Index Groups	Gender Inequality Index	
	World	Muslim
Very high human development	0.197	0.326
High human development	0.315	0.322
Medium human development	0.513	0.487
Low human development	0.587	0.640

But there is still a huge margin for improvement. In general, Muslim women have to fight a deeply unbalanced gender configuration that places them in secondary position to men. The controversial notion of guardianship (*qawamun*) of men over women has allowed for a very restrictive legislation for women in countries where Shariah is state law.

When analysing the performance of Muslim countries regarding womens access to education and labour market, we again find that the wealthier states have the greatest difference from global averages. Overall, female presence in educational establishments has considerably increased (Table 2) suggesting that as more and more women get educated they will be more critical about merely fitting into traditional roles and, therefore, further changes may be lurking over the horizon.

Table 2: Female Participation in Education and Labour Force, Comparison World – Muslim Countries

Human Development Groups	Female population with at least some secondary education (% aged 25 and above)		Female labour Force Participation rate (% aged 15 and above)	
	World	Muslim	World	Muslim
Very high human development	86.1	66.1	52.3	41.9
High human development	60.2	56.5	57.1	34.2
Medium human development	34.2	44.6	38.7	38.0
Low human development	14.3	8.7	55.7	51.2

Implications

- Equality in education and opportunities for women will determine futures of many Muslim countries and futures of the Muslim world as a whole.
- Very rich and very poor Muslim states appear to show little progress towards gender equality (despite recent developments in Saudi Arabia).
- Muslim women occupy leadership roles in politics, economics, and culture in many Muslim countries, an indication of regional social and cultural differences in gender relations.

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RELIGION AND CULTURE

There are a variety of ways to measure the impact of Islam in the lives of Muslims today. One could investigate the consistency of ritual practice such as daily prayers, fasting during Ramadan or the hajj. One could even track the quality and consistency of halal dietary practices from the butcher to the consumer. The approach we have taken is to investigate belief as a key factor in shaping the outlooks of Muslims. Table 1 presents the answers to two questions posed in a survey conducted by the Pew Research Center. The survey polled samples from Muslim countries and Muslim minorities from non-Muslim states. As expected, a discrepancy exists between Muslims in Muslim and non-Muslim states over the first question: 'how many faiths could lead to Heaven?' Whilst 73% of Muslims living in Muslim states think that only Islam can get one into Heaven, only around 52% of Muslims living in Europe and Russia think this. The conclusion could be drawn that living in Europe has shifted opinions of Muslim minorities, a product of the constant interaction with non-Muslims and seeing ethical overlaps between Islam and other religions. The second question, is 'converting others is religious duty?', produced a much more balance result with 69% of respondents insisting that conversion is a Muslim duty. This survey concludes that while Islam may be seen as the only way to heaven, the need to convert others is not a high priority, if even a priority at all.

Figure 1 shows the number of Muslims, both in Muslim and non-Muslim countries, who would prefer to have Shariah, Islamic law, as the law of their resident country. As in Table 1, those surveyed in Muslim countries favour Shariah law as the law of the land over those who live in more diverse states. Muslims living in non-Muslim states show a preference for Shariah law, but only in their communities and not as nation law. Russian and Thai Muslims are an example of this opinion. Those who preferring Shariah law as the law of the land also expressed that Shariah should apply to everyone and that belief in God is necessary to be a moral person. Those supporting Shariah law also believe that it should apply to local and family disputes as well as serve as the supreme law of the land.

Table 1: Percentage of Muslims Who Think/Agree...

Countries	How Many Faiths Lead to Heaven?		Converting Others Is a Religious Duty	
	Many	Only Islam	Disagree	Agree
Kosovo	24	59	55	26
Bosnia & Herzegovina	36	58	59	33
Russia	30	52	51	40
Albania	25	37	72	16
Tajikistan	10	84	27	69
Turkey	19	74	48	39
Kyrgyzstan	20	69	50	36
Uzbekistan	14	66		
Azerbaijan	18	63	36	42
Kazakhstan	49	29	77	15
Malaysia	4	93	16	79
Indonesia	9	87	65	31
Thailand	11	87	22	74
Afghanistan			4	96
Pakistan	3	92	4	85
Bangladesh	8	88	26	69
Egypt	3	96	9	88
Jordan	3	96	6	92
Iraq	3	95	20	66
Morocco	3	94	14	63
Palestinian territories	7	89	10	82
Tunisia	24	72	25	73
Lebanon	27	66	44	52
Niger	5	92	9	89
Nigeria	12	86	7	89
Djibouti	8	85	11	84
Ethiopia	17	81	21	78
Mali	12	80	7	89
Ghana	17	78	6	92
DR Congo	16	74	6	84
Liberia	22	71	5	93
Tanzania	27	70	8	87

Table 1 (Continued): Percentage of Muslims Who Think/Agree...

Countries	How Many Faiths Lead to Heaven?		Converting Others Is a Religious Duty	
	Many	Only Islam	Disagree	Agree
Uganda	28	66	13	84
Senegal	33	62	21	75
Cameroon	39	57	15	84
Guinea Bissau	34	54	13	82
Chad	49	50	11	88
Mozambique	44	49	14	80
Average	20	73	24	69

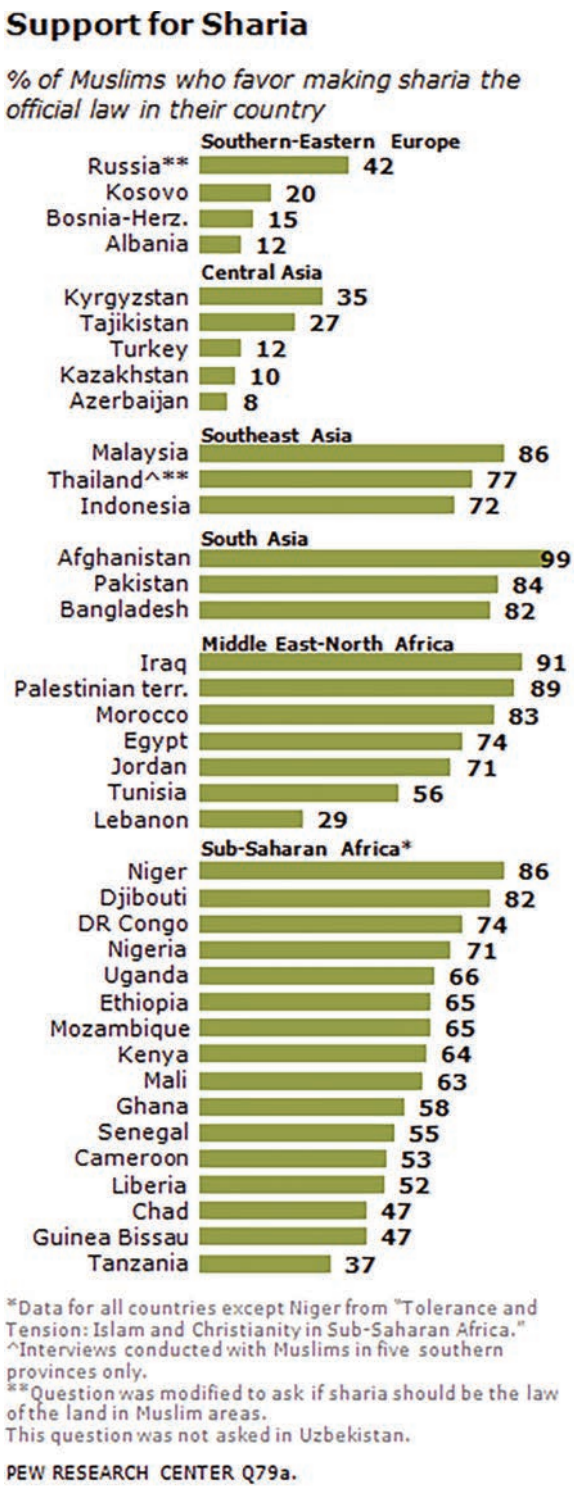

Figure 1: Percentage of Muslims Who Favor Making Shariah the Official Law in Their Country

Is Islam a source of conflict? Surprisingly, a majority of Muslims do not regard Islam itself as a basis for conflict even though Muslim lands are ridden with sectarian strife and violence. As Table 2 shows, the majority even in conflict ridden countries, such as Iraq and Afghanistan, do see religious conflict as a big problem. In contrast, the majority in Pakistan, Nigeria, Lebanon – states that have seen some of the worst sectarian violence – consider religion to be a source of conflict. While many Muslims agree that 'Islam is a peaceful religion', and the heart of Islam lies in following the example of the Prophet Muhammad, a fundamental divide exists in whether the Sacred text is to taken literally or interpreted in a more contextual and metaphorical way.

Table 2: Percentage of Muslims Who Say that Religious Conflict is a Very Big Problem in their Country

Religious Conflict			
Countries	**% Yes**	**Countries**	**% Yes**
Bosnia & Herzegovina	35	Iraq	46
Kosovo	20	Egypt	28
Russia	20	Jordan	13
Albania	12	Niger	64
Turkey	34	Nigeria	60
Kyrgyzstan	33	Djibouti	52
Kazakhstan	12	Mali	46
Tajikistan	11	Liberia	44
Uzbekistan	3	Chad	38
Azerbaijan	1	DR Congo	35
Indonesia	36	Guinea Bissau	35
Thailand	27	Ghana	32
Malaysia	26	Cameroon	31
Pakistan	57	Kenya	31
Afghanistan	35	Mozambique	28
Bangladesh	29	Tanzania	27
Lebanon	68	Uganda	24
Tunisia	65	Senegal	23
Palestine	54	Ethiopia	16

The position is much more clear when it comes to Western and secular culture. Two out of three Muslims believe there is a conflict between Islam and contemporary society (Table 3). Interestingly, those with the strongest belief in the existence of this conflict are the majority Muslim states and former soviet states, victims of cultural evolution following the fall of the Soviet Union and the increasingly Western consumerist cultural appropriation.

Table 3: Percentage of Muslims Who Say That There is a Conflict Between Religion and Contemporary Society

Is There a Conflict Between Religion and Modern Society?					
Countries	**Yes**	**No**	**Countries**	**Yes**	**No**
Bosnia & Herzegovina	54	40	Egypt	76	22
Albania	58	34	Palestinian terr.	72	21
Kosovo	57	23	Jordan	83	15
Russia	69	22	Chad	39	59
Turkey	49	38	Kenya	40	54
Uzbekistan	58	28	Cameroon	47	47
Kazakhstan	73	23	Tanzania	50	47
Kyrgyzstan	74	21	Ethiopia	49	44
Tajikistan	69	20	Djibouti	44	40
Azerbaijan	79	13	Niger	50	40
Thailand	64	32	Nigeria	51	38
Malaysia	59	23	Guinea Bissau	42	37
Indonesia	70	21	Mozambique	51	36
Bangladesh	39	55	Uganda	51	36
Afghanistan	56	32	Liberia	45	35
Pakistan	34	30	Ghana	54	31
Tunisia	46	50	DR Congo	39	30
Lebanon	51	45	Senegal	62	20
Iraq	60	27	Mali	52	16
Morocco	55	26			

Culture is a notoriously difficult term to define. Scholarly definitions of culture range from 'learned behaviour', 'intellectual development' to artefacts and culture as a function of civilisation. Here, we are concerned with key trends in arts, literature, music, and heritage. Unfortunately, data on these subjects in relation to Muslim societies is only

conspicuous by its almost total absence. However, it is possible to make certain observations. Muslim societies are basically split into two groups: countries that produce indigenous cultural products and states that import culture from the West. In the latter category, are a host of Gulf states that have bought museums and other cultural artefacts wholesale from Europe and the United States. The Guggenheim Museum and the Louvre in Abu Dhabi are a good example. It is likely that Saudi Arabia would also eventually follow this trend. In the former category are countries like Pakistan, Bangladesh, Egypt, Turkey, Indonesia, and Morocco, where local culture – in all its forms: art, music, drama, literature and cinema – is thriving. Both an Egyptian (Naquib Mafouz) and a Turk (Orhan Pamuk) have won noble prizes in literature; and literary novels from Pakistan, Egypt, Morocco, and even Saudi Arabia are now making regular appearances in lists of prestigious literary prizes.

Both these contradictory trends are set to continue. But neither of them indicate that Muslim states have developed the ability to harness culture as a source of global power.

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ENTERTAINMENT AND SPORTS

Is the future of global entertainment in Halalywood and Nike sponsored hijabs? Just as there is an established trend for Islamic fashion, there is also an emerging trend for Islamic entertainment – dubbed 'Halalywood'.

There is little doubt that the Qatar World Cup 2022 competition will focus attention on football in the Muslim world. Bangladesh and Afghanistan have emerged as cricketing nations recently; cricket is well established in Malaysia, Indonesia and Iran; and Pakistan has joined India and Australia in having its own Premier League. A royal decree in Saudi Arabia allows women, for the first time, to watch a live football match inside the stadium. Part of Crown Prince Mohammed bin Salman's Vision 2030 plan is to invest $64 billion in entertainment to open opera houses, movie theatres, and investment in film and live events; this investment will, no doubt, have a major impact on the entertainment industry in the Muslim world.

As desire for culture change in entertainment industries pushes for better treatment and representations of women and minorities, Muslim societies are going to be a major target for global entertainment and sports. As sports and entertainment industries seek to increase their profits, targeting of Muslim societies and the influence they play on these industries looks to increase in the near future.

Western entertainment's history of racism and orientalist 'otherness' has received serious criticism from a number of quarters. While strides have been made to make characters and settings more global, certain facets of Western culture come into conflict with Muslim culture. This is especially the case in costume design, sexuality, language usage, and violence portrayed in film, television, and music. Table 1 asks Muslims from around the world if they believe most of the mainstream Western entertainment is immoral.

Table 1: Percentage of Muslims Who Believe That Western Entertainment Hurts Morality

Does Western Entertainment Hurt Morality?			
Countries	**Yes**	**Countries**	**Yes**
Russia	58	Jordan	69
Bosnia & Herzegovina	46	Tunisia	63
Kosovo	44	Egypt	62
Albania	40	Tanzania	80
Uzbekistan	81	Uganda	80
Kyrgyzstan	69	Kenya	77
Azerbaijan	52	Mozambique	77
Tajikistan	51	Senegal	75
Turkey	50	Cameroon	73
Kazakhstan	50	Ghana	72
Thailand	72	Chad	69
Malaysia	65	Niger	67
Indonesia	55	Mali	67
Pakistan	88	Liberia	66
Bangladesh	75	Nigeria	64
Afghanistan	66	Djibouti	64
Palestinian terr.	81	Ethiopia	64
Iraq	75	DR Congo	64
Morocco	72	Guinea Bissau	47

One of the largest exporters of Western entertainment is Hollywood. Figure 1 shows average box office revenues between Arabic and non-Arabic film in three countries which house a majority of the Middle East's cinemas. These countries are interesting because they represent three responses to Western culture. Egypt keeps very strongly to its culture and holds out against popular Western film. These numbers are lower as well because of Egypt's strict foreign film restriction quotas, high taxes, and the population's preference for watching films in the Arabic language. The UAE, on the other hand, welcomes popular Western box office hits. Lebanon exists with several other countries in the Middle East with an equal desire for native and foreign films.

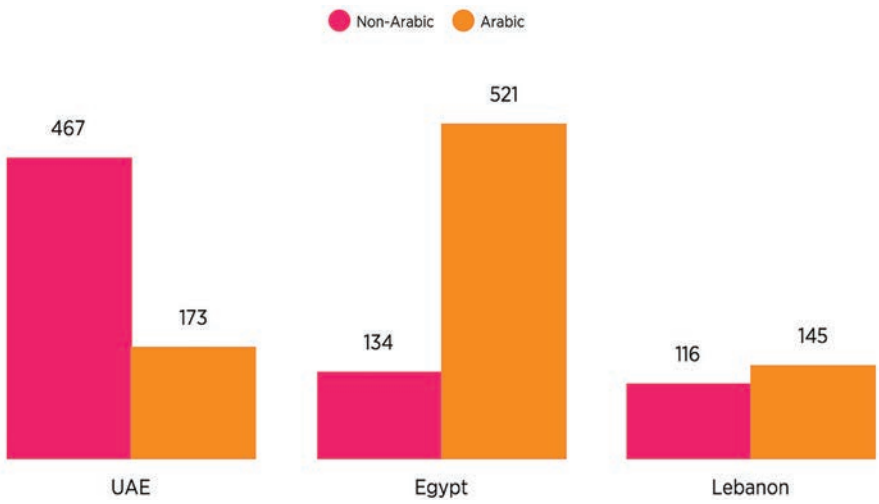

Figure 1: Average Box Office Revenue per Title: Non-Arabic vs Arabic Films (USD thousands), 2015

Some of this difference in box office revenue may be in part due to the genres covered in film. Western film tends to have larger budgets which provide for a greater spectrum of genres to be covered. Figure 2 shows the genre distribution between Arabic and non-Arabic language film.

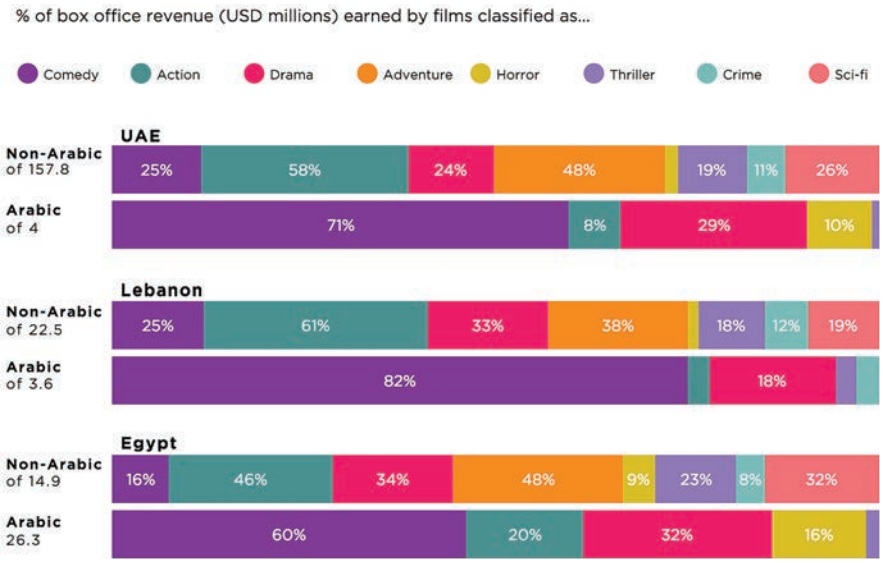

Figure 2: Box Office Revenue by Genre, Arabic and Non-Arabic Films, 2014

This Northwestern University in Qatar study surveyed people from Tunisia, Lebanon, Qatar, Saudi Arabia, Egypt, and the UAE. Overall 56% of them preferred to watch films in English. 55% feel that Hollywood films are enjoyable but 43% find them immoral on the whole. 40% would prefer films that portray their culture and only 38% feel US films portray the Middle East accurately. 79% believe that films should make an effort to preserve cultural tradition.

Where film approximates largely as an importation of Western pop culture into Muslim societies, the music industry shows a blending of cultures and an avenue for exportation of Muslim culture to the rest of the world. A rich potential for the music industry comes from the poetic nature of Muslim languages such as Arabic and Urdu. This poetic nature also lends itself well to the Western styles of Rap, Pop, and electronic music. Muslim content packaged in Western style provides an interesting industrial dynamic that has a large potential of targeting the largely young global Muslim population. Figure 3 breaks down the revenues of the music industry. The sale of CDs is decreasing as more high-speed internet becomes available in Muslim societies and pirating of music is showing a gradual increase.

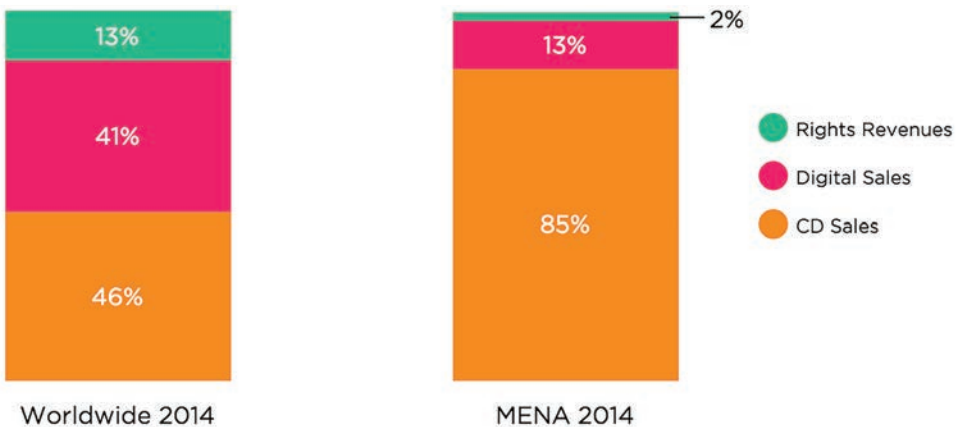

Figure 3: Recorded Music Revenue Sources, 2014

Figure 4 Compares Middle Eastern and North African countries music revenues between recorded sales and sales from live shows. This shows that Muslim societies are potential areas for future musical tour location scouting and provides an opportunity for exploring the market possibilities of increasing recorded music sales. Figure 5 then looks at how sponsorship covers a lower percentage of live concert revenues than the rest of the world. This is a huge opportunity for market targeting and could show live concerts in the Muslim societies being a major source of revenue in the entertainment industry.

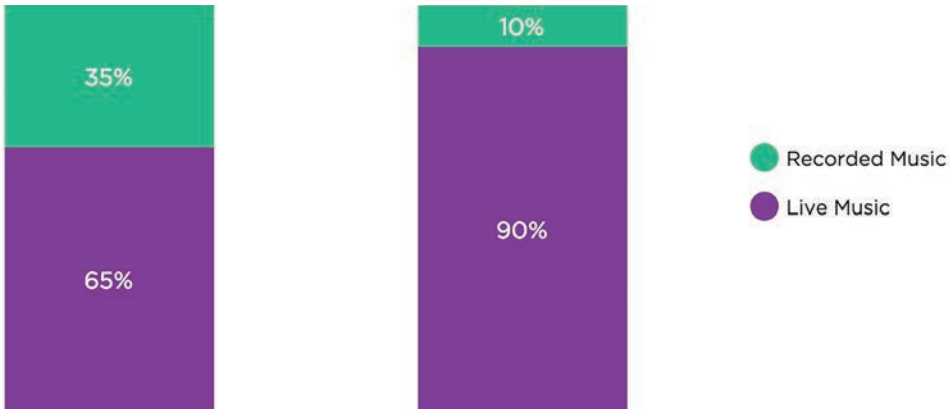

Figure 4: Music Industry Estimated Revenue Sources, 2014

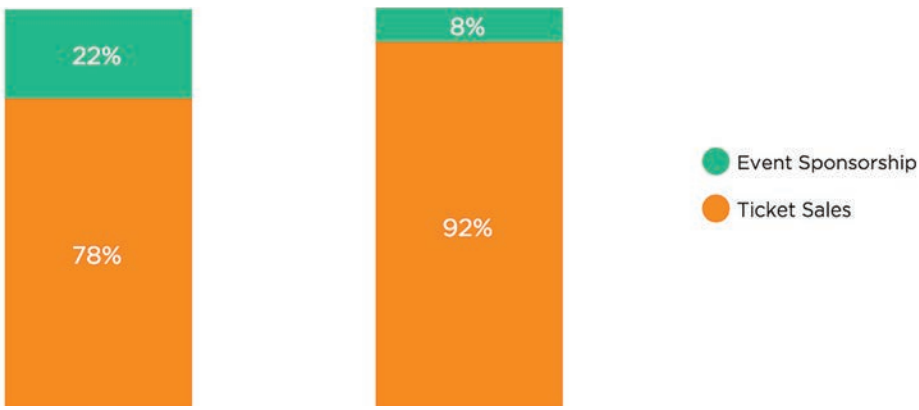

Figure 5: Global vs. MENA Live Music Revenue Sources, 2014

Popular culture is a dynamic and ever-changing entity. Following the Arab Spring of 2011, products that bore some revolutionary appeal drastically increased their profit margins. It was easy for street venders to capitalise on the revolutionary market as sales of clothing showing the Egyptian flag on it heavily increased. The designers of the West also have their eye on dress fashion of the Middle East and Northern Africa. Fashion magazines look to the appeal of lighter, yet more modest clothing wore largely for practical purposes in the Gulf. Hijabs could soon become a necessary accessory, worn by models from Milan to Paris and New York.

The sporting industry has been a major contributor to the exportation of Western culture around the world. It also has provided a huge source of profit for investment that has not gone unnoticed in the Middle East and

Africa. Football, Basketball, and American football have contributed to a majority of sports revenue and have been an area of high investment by Muslim investors. Figure 6 shows ownership of football clubs in Europe by Muslims.

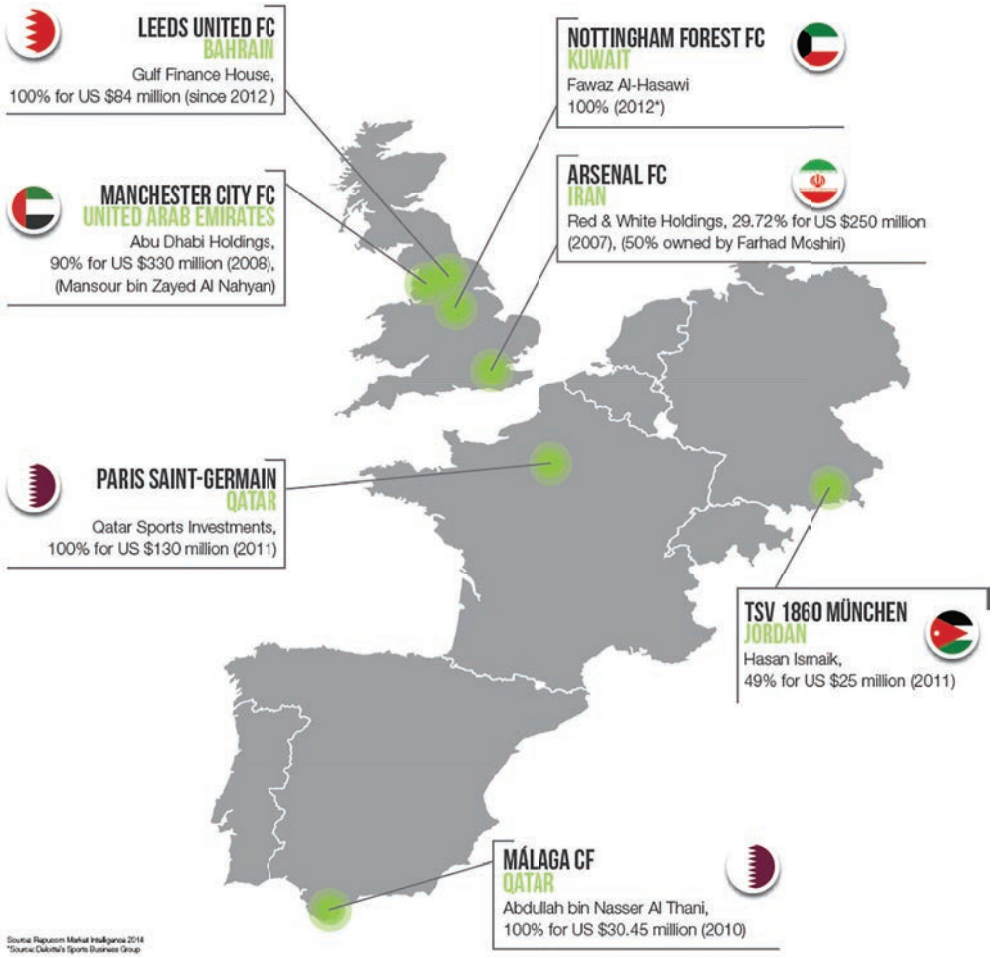

Figure 6: Muslim Ownership of European Football Clubs

It is also worth noting that the American football team, the Jacksonville Jaguars is owned 100% by Shahid Khan, a Pakistani American, and purchased in 2012 for $760 million. Muslims have a large influence in various global sports networks. The mix of young populations and various state of the art sporting venues, throughout the Gulf in particular, make Muslim societies a prime location for further professional sporting development. Such sporting brands as Nike have already sought out sponsoring new additions to athletic equipment like the hijab for female athletes.

2022 will stand to be the beginning of an era for professional sporting events in Muslim societies with Qatar's World Cup. Football being well accounted for with various leagues throughout the Muslim world, cricket stands as the number two most popular sport in the world and is even being considered for becoming part of the Olympics. A future Olympics hosted in the Muslim world would spell the pinnacle of the Muslim world's influence on the world of sports.

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ISLAMOPHOBIA AND THE RISE OF THE ALT-RIGHT

The last few years have seen two trends merge into one. In the West, the concept of Islamophobia entered popular discourse at about the same time as far right officials and politicians won elections throughout Europe and the US. A new movement emerged known as alt-right. These occurrences are not new phenomena. But they are not the repetition of history per se either. Rather, they have emerged through specific contemporary triggers aimed at specific future outcomes.

The term Islamophobia has generated a great deal of controversy as well as academic debate. It can be defined, quite simply, as an outlook evoked by an irrational fear of Muslims or Islamic practices that materialises as prejudicial, hateful interaction or representation in media, art, or other forms of cultural expression. The alt-right movements are pseudo-fascist right-wing political actors that stand for nationalism and alleged purity of European values. In the US, they embrace conservative Christian values and white supremacist nationalism. But Islamophobia is not limited to Europe or US where the alt-right has penetrated the corridors of power. Islamophobia is now a well-established global trend: it has infected India, Myanmar, Australia and other parts of the world. The election of Donald J. Trump as the forty fifth US President represents a major milestone for the wedding of alt-right politics and Islamophobia.

Islamophobia derived from a cultural acceptance of orientalism surrounded in anti-West sentiment at the end of the twentieth century. The Runnymede Trust highlighted the use of the term in 1997 as a way of opening up discourse on multiculturalism in Britain. Runnymede addressed the issue specifically in a 2017 report. Currently, Islamophobia is a key discussion point amongst legislative bodies throughout the West. Canadian motion M-103 shows one of the first movements against Islamophobia by a national parliament; and the European Union (EU) focused

on Islamophobia during its deliberations on anti-discrimination in the work place.

The importance of the EU legislative debate is highlighted by the rise in anti-Muslim bigotry seen throughout Europe (see Figure 1). The steady increases projected for Muslim populations and Muslim youth in Europe (see: Population and Youth) and the on-going refugee crisis (see: Migration and Refugees) has been used by the far right to fuel anti-Muslim sentiments.

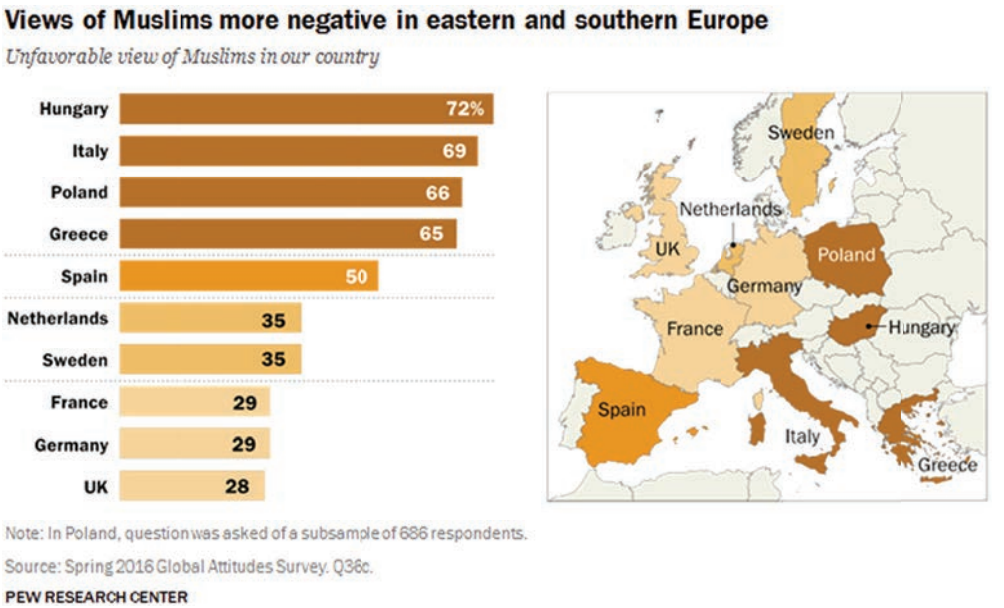

Figure 1: Anti-Muslim Bigotry in European Countries

Figure 2 shows a specific spike in xenophobia directed at Muslims in recent years. This is a direct product of political hate speeches and portrayals of Muslim in the media. It has also led to discrimination and exclusion of Muslims from services and employment in the labour market. Less subtle and often more extreme cases arise in the form of counter-terrorism policies and initiatives.

In the US, hate crimes with anti-Muslim bias has doubled between 2010-2015 from 12.7 % to 29.1 % (Table 1) while simultaneously hate crimes with an anti-Jewish bias have decreased, which suggests that Muslims have become the new 'enemy within'. Governmental harassment of Muslim citizens has also shown a steady increase between 2007-2015.

Islamophobic policies range from the banning of symbolic clothing articles, for example in France, and the use of the Arabic language to state harassment such as the Uighur Muslims of China and the Rohingya Muslims of Myanmar.

Number of countries where religious groups were harassed, by type of harassment

	Government harassment in the year ...									*Social harassment in the year ...*								
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'07	'08	'09	'10	'11	'12	'13	'14	'15
Christians	79	80	71	95	78	81	85	79	97	74	72	70	77	81	83	71	85	94
Muslims	77	74	58	74	78	83	73	80	106	64	53	58	64	82	88	84	81	94
Jews	11	16	14	21	28	28	39	31	43	46	48	60	64	63	66	72	80	67
Others*	25	28	29	40	39	34	33	39	44	15	13	19	28	18	20	17	17	18
Folk religions**	13	10	9	10	5	11	12	13	16	16	13	19	20	21	18	26	12	23
Hindus	12	11	9	13	9	13	8	9	14	12	9	8	10	6	9	4	7	11
Buddhists	7	7	6	11	5	9	7	8	5	4	4	4	7	5	7	7	3	3
Unaffiliated	CODING WAS NOT DONE					2	1	1	9	CODING WAS NOT DONE					2	4	3	6
Any of above	**118**	**112**	**103**	**124**	**129**	**131**	**133**	**129**	**157**	**127**	**110**	**124**	**135**	**150**	**147**	**145**	**139**	**146**

*Includes Sikhs, members of ancient faiths such as Zoroastrianism, members of newer faiths such as Baha'i and other religious groups.
**Includes, for example, followers of African traditional religions, Chinese folk religions, Native American religions and Australian aboriginal religions.
Note: This measure does not assess the severity of the harassment. Numbers do not add to totals because multiple religious groups can be harassed in a country.
Source: Pew Research Center analysis of external data. See Methodology for details.
"Global Restrictions on Religion Rise Modestly in 2015, Reversing Downward Trend"

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Figure 2: Structural and Societal Harassment of Muslims Around the World

Table 1: USA Hate Crimes With Bias Motivation, Anti-Islamic Bias

Year	Victims of anti-religion bias	Victims of anti-Islamic bias	Percentage from total
2015	1402	307	29.1%
2014	1140	184	16.1%
2013	1223	167	13.7%
2012	1340	155	11.6%
2011	1480	185	12.5%
2010	1552	197	12.7%
Total	8137	1195	14.7%

Source: FBI Hate crime statistics

Far right parties have grown in many places all over the world, but most notably in Europe where these parties have participated in coalition governments in Austria, Croatia, Estonia, Finland, Italy, Latvia, the Netherlands, Poland, Serbia, Slovakia, and Switzerland; and have also supported minority governments in Bulgaria, Denmark, the Netherlands, and Norway. Table 2 lists the countries with far right parties in national parliaments; and Figure 3 show the percentage votes won by nationalists' parties in Europe.

Implications

- Islamophobia is a concept that is deeply embedded in Western culture, language, and society. To excise it, the conversation needs to shift from an argument of free speech and national tradition, to multiculturalism and societal acceptance of past wrongs and look towards future corrections.
- Muslims need to understand the dangers that the continuous rise of the far right throughout the globe represents.
- Muslims are the most likely target of these parties' xenophobic discourse as they embody many features of the hated or feared Other: different ethnicity, different religion, different culture and the existence of radical Muslim minorities in Europe and the US provides arguments to build that fear and hate discourse.
- The formation of political parties based on racist or Nazi foundations should be thwarted and coalition with them must also be frowned upon.

Table 2: Countries With Far-Right Parties in National Parliaments

Australia	Coalition (factions), Pauline Hanson's One Nation, Australian Conservatives, Katter's Australian Party
Austria	Freedom Party of Austria, Team Stronach
Belarus	Liberal Democratic Party
Belgium	Vlaams Belang, People's Party
Bosnia and Herzegovina	Bosnian-Herzegovinian Patriotic Party
Brazil	Patriota
Bulgaria	United Patriots (National Front for the Salvation of Bulgaria, IMRO – Bulgarian National Movement, Attack)
Canada	Conservative Party (factions)
Croatia	Croatian Democratic Alliance of Slavonia and Baranja, Croatian Conservative Party, Croatian Democratic Union
Cyprus	ELAM, Solidarity Movement
Czech Republic	Dawn – National Coalition, Freedom and Direct Democracy
Denmark	Danish People's Party
Estonia	Conservative People's Party of Estonia
European Union	Movement for a Europe of Nations and Freedom, European Alliance for Freedom, Alliance for Direct Democracy in Europe, Alliance of Conservatives and Reformists in Europe (factions)
Finland	Finns Party
France	National Front, France Arise, The Republicans (factions), Pè a Corsica
Georgia	Alliance of Patriots of Georgia

Table 2 (Continued): Countries With Far-Right Parties in National Parliaments

Greece	Golden Dawn, Independent Greeks
Hungary	Fidesz, Jobbik
India	Bharatiya Janata Party, Shiv Sena
Italy	Lega Nord, Brothers of Italy, Us with Salvini, Five Star Movement (factions), Forza Italia (factions)

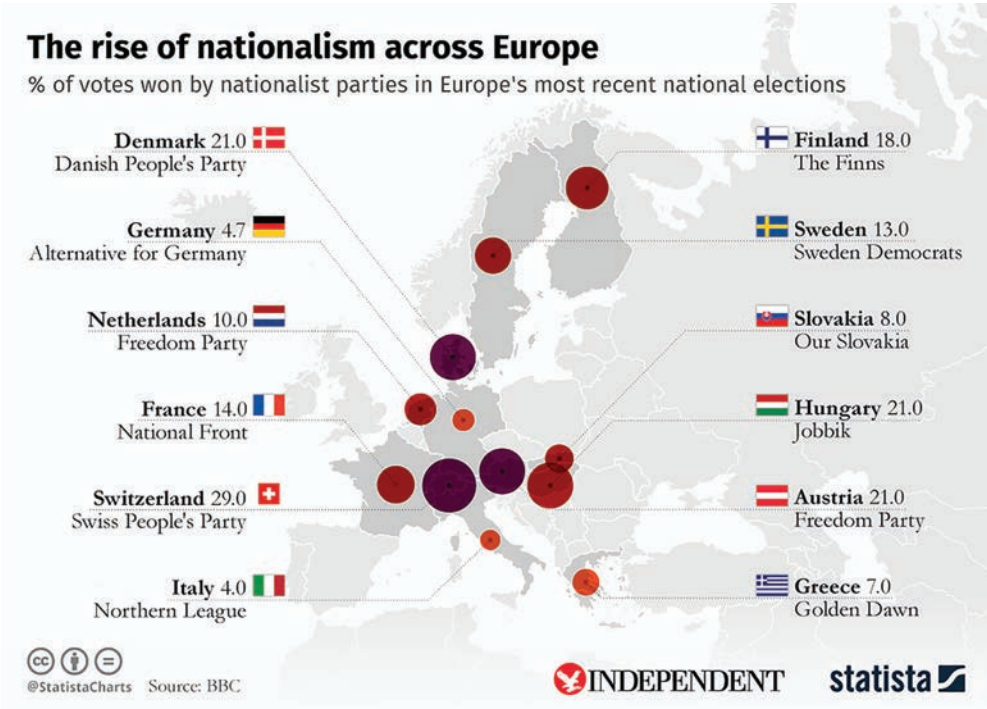

Figure 3: The Rise of Nationalism Across Europe - Percentage of Votes Won by Nationalist Parties in Europe's Most Recent National Elections

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SOCIAL MEDIA AND ARTIFICIAL INTELLIGENCE

In October 2017, Saudi Arabia granted the first citizenship to a robot named Sophia, the creation of Hong Kong's Hanson Robotics. She was a viral sensation, debate on her humanity and intelligence reposted on various social media platforms around the world. Her virality reached a peak when a fake news story roared through the same social media circuit, stating that Saudi Arabia had beheaded her for crimes against God and the kingdom. The incident demonstrates how two major techno-social revolutions are affecting Muslim countries.

The advent of social media has connected East and West, North and South, in an open exchange of information and communication via Facebook, WhatsApp, Twitter, and a slew of other platforms. Social media brings people together but also divides and fragments them simultaneously. It has the power to both enhance and undermine democracy and can be an engine for building and toppling regimes. Artificial Intelligence (AI) begins as the automation of processes, readily seen in industry and retail, but can grow to being integral part of manufacturing processes, banking, advance medicine, and war (see Armed Conflict and Terrorism). AI is bringing about walking, talking robots that can interact with us and that can be given rights.

The global rise of social media usage is not simply a testament of high-tech hype. It is the logical product of the internet and communication technology's acceleration. It is now widely used throughout all Muslim societies.

As in the rest of the world, usage of social media in the Muslim world continues to grow. A six-nation study (Saudi Arabia, Egypt, Qatar, Tunisia, Lebanon, and the United Arab Emirates) by Northwestern University in Qatar found that the largest social media platforms in the Middle East are Facebook and WhatsApp. Twitter usage diminished between 2013 and 2015, but Instagram and Snapchat usage were on the rise. Figures 1 and 2 show social media usage and platform preference throughout the six nations surveyed.

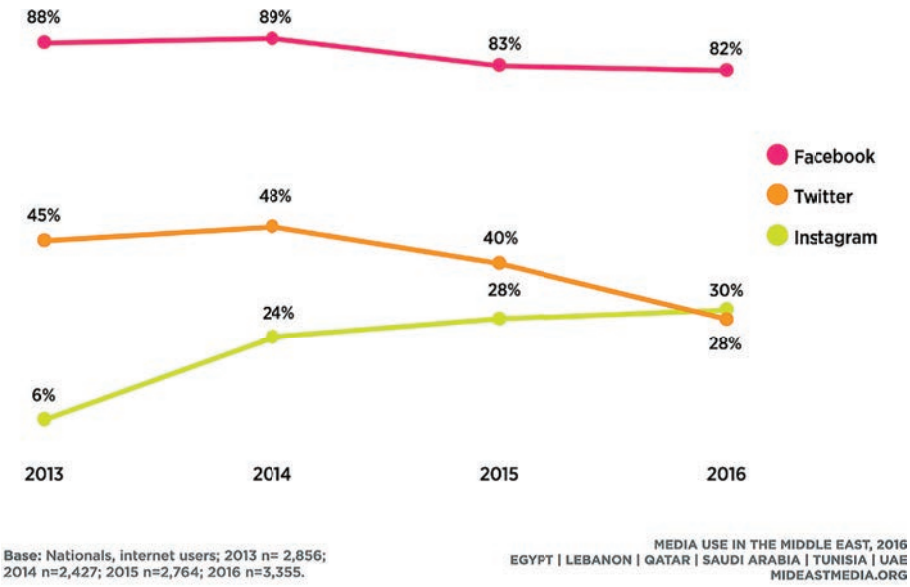

Figure 1: Percent Who Use the Following Social Media Platforms

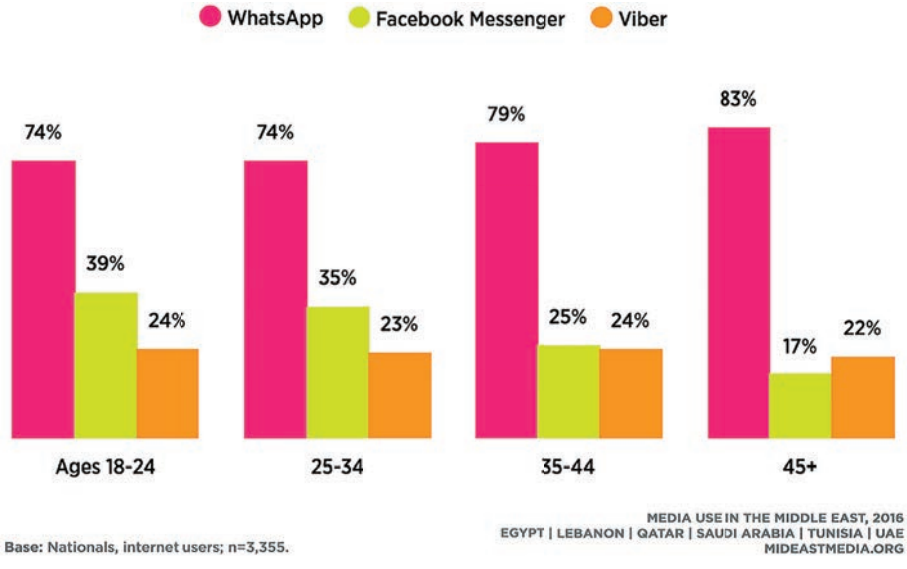

Figure 2: Percent Who Use the Following Social Media Platforms, by Age

Figure 3 shows internet penetration within and accessibility of mobile and broadband services in the six countries surveyed; most of these services are provided by landlines, cellular towers, and satellites.

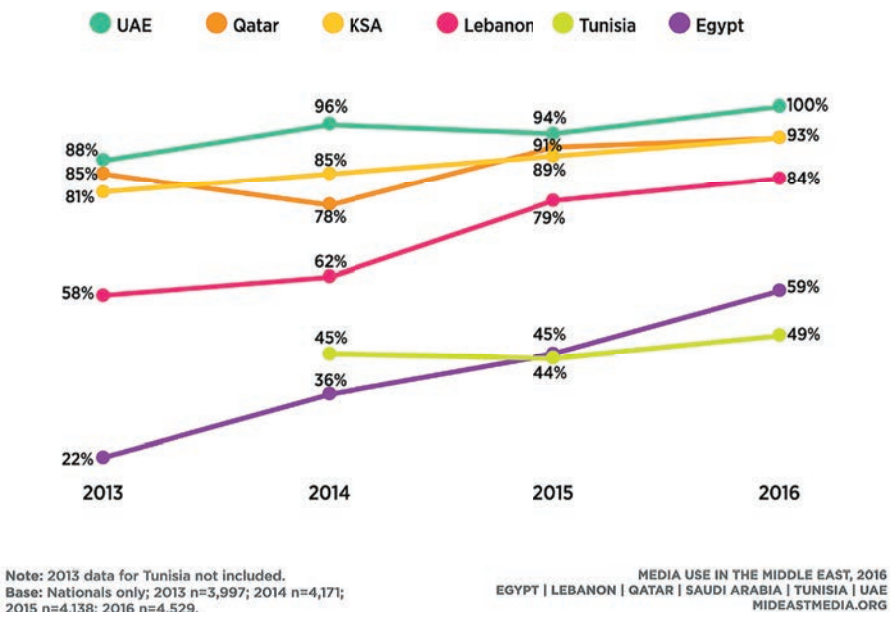

Figure 3: Internet Penetration, by Country

Internet penetration and usage is set to escalate in other Muslim countries as well, even the so-called least developed states, with the recently launched O3b Networks, four new satellites that orbit closer to the Earth than other satellites and will provide a wider radius of signal. Google's Loon Project – balloons that float to deliver internet to rural and disaster struck areas – will provide internet access to the most remote areas.

Increased access to the internet in Muslim societies would have numerous benefits in terms of access to information, knowledge and organisation capabilities. But as the Arab Spring of 2011 in Egypt, one of the first examples of social media's power, demonstrated it can be used both to round up discontent and fuel revolution as well as to impose authoritarian rule.

There is a great deal of paranoia surrounding social media usage throughout the Muslim world. Figure 4 shows the variety of topics that are posted on social media. While the news covers the majority of posts, overall the general fear of one's government or corporations looking in on what is being posted is relatively small. This is demonstrated in Figures 5 and 6. This may be one reason why there is surprisingly small usage of Virtual Private Networks (VPN), that provide secure access to the web, as shown in Figure 7.

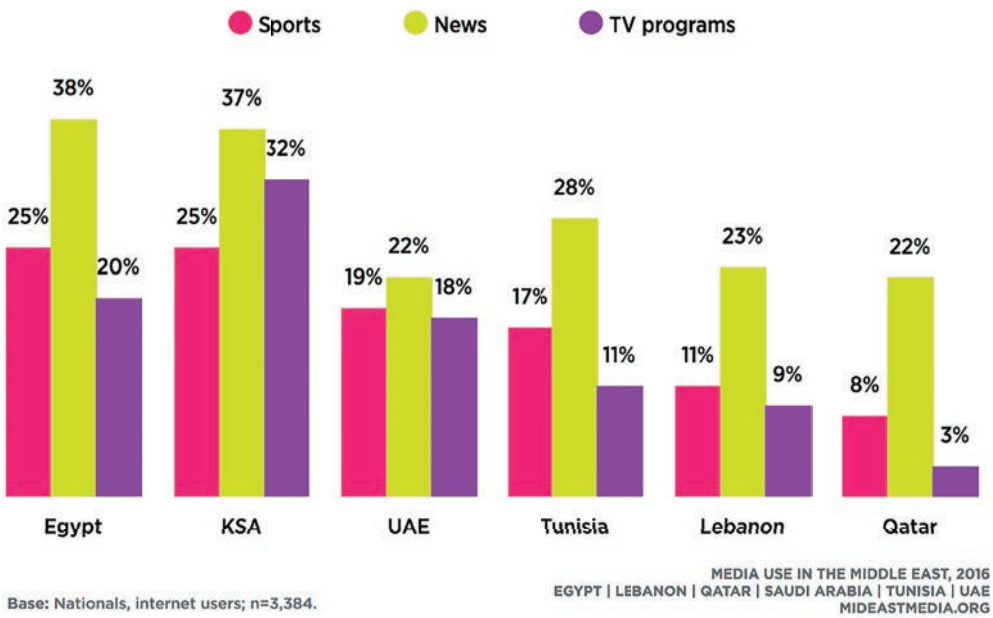

Figure 4: Percent of Internet Users Who Sent or Shared Content or Comments Online Related to Sports, News or TV in the Past Month

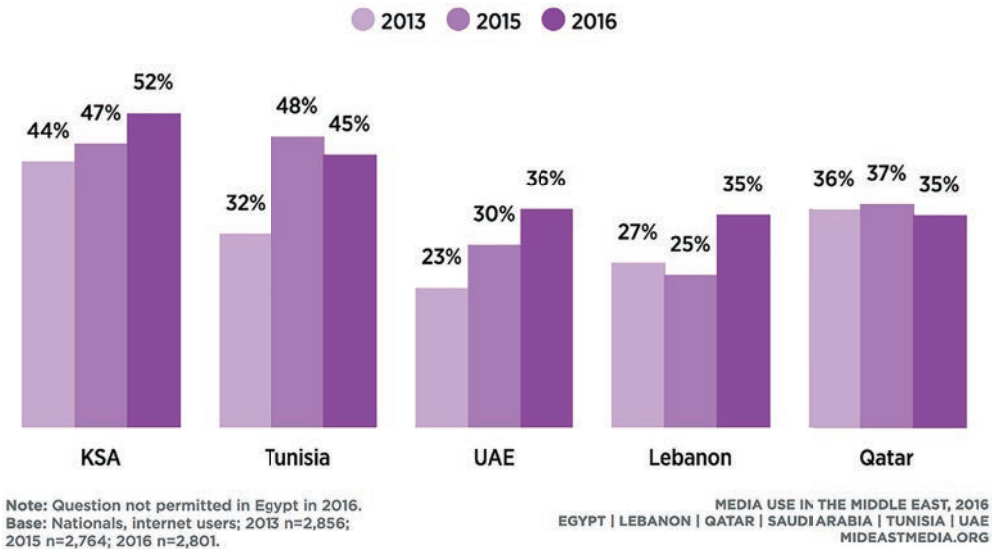

Figure 5: Percent Who Agree: "I Am Worried About Companies Checking What I Do Online"

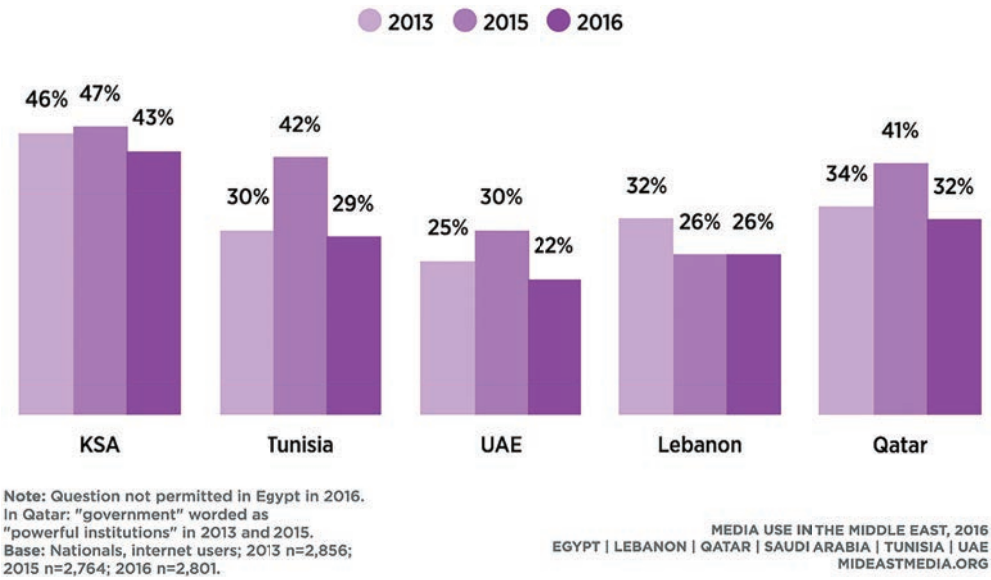

Figure 6: Percent Who Agree: "I Am Worried About Companies Checking What I Do Online"

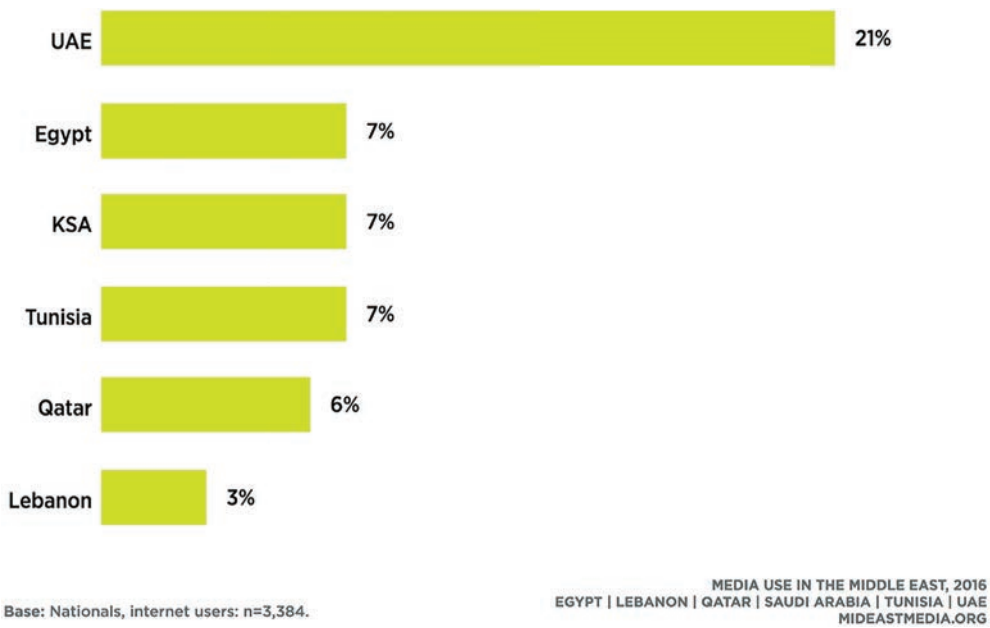

Figure 7: Percent of Internet Users Who Say They Use a vPN or Proxy Service

Social media opens a society up to data obesity, where people are over-inundated with information. Alongside increased knowledge in video editing and sources of information, fake news and conspiracy theories have flooded this information stream. Social media platforms are also based on algorithms that can both feed you what you have liked previously and box you into a group of people with similar ideologies and desires. On a small scale this can be used for commercial gains in marketing. On the larger scale, theoretically, governments could influence democracy and manipulate public opinion through these algorithms.

Similar technologies and external forces driving the proliferation of social media are also advancing AI in a way not previously seen. Figure 8 shows the rise in funding for AI-based start-up companies between 2011 and 2015. These start-ups were focused on healthcare, marketing, and finance. AI's potential expansion is nearly limitless and will be popping up in all facets of life in the near future all around the world.

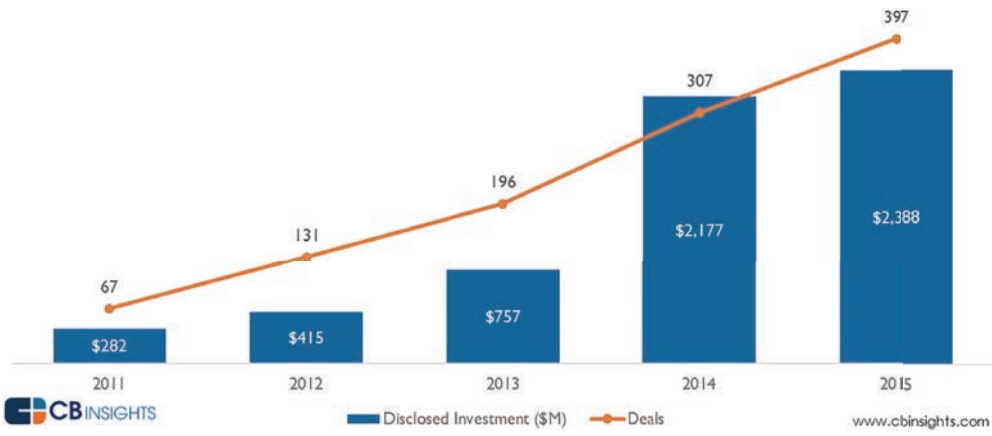

Figure 8: AI Landscape: Global Yearly Financing History, 2011-2015

As AI advances towards the automation of all tasks, cognitive as well as physical, it will have a major impact on the economies of Muslim societies. White-collar, blue-collar jobs as well as labourers working in garment and textile industries will be affected. In the West, a net employment impact of the loss of 7.1 million jobs is projected between 2015-2020 from disruptive labour market changes. This includes white-collar routine office functions, manufacturing and production tasks, and construction and extraction activities. The International Labour Organisation (ILO) has forecasted an increase of 11 million in global unemployment by 2020. Also by 2020, it is estimated that a third of the desired core skill sets for most occupations will be comprised of skills not yet considered crucial in today's job market. We can safely assume that unemployment in Muslim countries will rise quite drastically. Some European governments have already started to prepare for this. For

example, Finland has introduced a phenomenon-based curriculum model that emphasizes the 4Cs of communication, creativity, critical thinking, and collaboration. Automation will not only demand a new economic paradigm and a new educational system but will transform the very face of society.

The next major step in AI progression is the increasing creation of robots. In 2014, physicist Stephen Hawking and a group of American physicists wrote to *The Independent* warning that artificial intelligence could spell the end of humanity. In contrast, opponents to the cautionary approach, such as American scientist and inventor, Ray Kurzweil, see AI as a positive trend that would lead to the merging of biological and mechanical in what he calls 'the singularity'. While much of what has been said is speculative, real robots will be rolling off assembly lines very soon. These robots will range from caregiving and other round-the-clock routine labour to interactive friends, sex robots and soldiers. A delicate balance will be required between improvements to the quality of life and the ultimate irrelevance and consequential end of human existence.

Implications

- Muslim communities will need to be prepared for the increase proliferation of online media and social networks.
- With this new mode of social discourse both Muslim populations and governments stand greater challenges in civil order and transparency. Attempts to control these platforms will result in increased chaos and overall regional instability.
- Data accumulation will be as important a topic to Muslims as to the rest of the world as corporate and government interests and trading in data will lead to increased marketing profiling. Facial recognition and social media's algorithmic functions could be used for targeting dissent and potential violent crimes. This information in turn can result in greater undermining of freedoms and democratic values.
- Automation stands to be the greatest challenge for the future of Muslim economies. A paradigm shift in Muslim economic systems will be required to make up for the labour loss potentials predicted in the nearing future
- Muslim educational systems will need to be reformed to prepare for an AI and Big Data based economy. If this does not occur the Muslim countries workforce will be unable to compete in the global market.
- Advancing AI and the rise of robots raises some deep moral and ethical issues that require urgent attention of Muslim scholars and thinkers.

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ISLAM AND RELIGIOUS THOUGHT

Efforts to reform Islam have a long history. We can distinguish a number of distinctive trends over the last hundred or so years. The reformist movement started by Jamal al-Din al-Afghani, Mohammad Abduh and Rasheed Rida at the beginning of the twentieth century. The various reformist movements in India during the 1920s and 1930s, when the poet and philosopher, Muhammad Iqbal, was writing *The Reconstruction of Religious Thought in Islam*. The reformist trend of the 1970s and 1980s, when it was widely believed that we are riding on the crest of a revival in Islamic thought – thanks to the Iranian revolution and the emergence of new discourses such as 'Islamisation of knowledge', 'Islamic economics' and 'Islamic science'. Ostensibly, these trends followed the classic S curve: they took off, reached a peak and a plateau, and eventually fizzled out. Except they did not: they were reborn as new individual or collective trends.

The more recent trends of Islamic reform have emerged from preceding trends spreading well over a century. But unlike previous trends, which tended to be concerned with general issues of reform in political thought and aimed to 'modernise' Islam in some way, the current trends are much more focussed: for example, on reinterpretation of the Qur'an, gender issues, reformulating the Shariah, and to give the title of a recent book, *Rethinking Reform in Higher Education*. Given the nature of these trends, there are no statistics. But we can easily discern these trends because of the sheer intellectual and academic output or the transformations they have engendered in terms of policies, laws or political thought.

We can identify four distinctive sub-trends within an overall trend for reforming Islamic thought.

Perhaps the most prominent sub-trend revolves around re-interpretation of the Qur'an. There are now a plethora of books that argue for or offer new interpretations of the Qur'an: from 'contemporary' approaches to liberal and humanist perspectives (such as the late Nasr Abu Zaid's *Rethinking the Qur'an: Towards a Humanistic Hermeneutics*), to the feminist angle (such as the works of Amina Wadud and Asma Barlas), to emphasising traditional women's standpoint (as, for example, in the works of Zainab Al-Ghazali, Kariman Hamzah and Bint Al-Shati), to a whole range in between.

The second sub-trend is focussed on rethinking the Shariah, or more specifically *maqasid al-Shariah*, or the higher objectives of the Shariah – best exemplified by Jasser Auda's *Maqasid al-Shariah as Philosophy of Islamic Law*, Adis Duderija's *Maqasid al-Shariah and the Contemporary Reformist Muslim Thought*, and Gamal Eldin Attia's *Towards Realization of the Higher Intents of Islamic Law*. A number of works that revisit work of classical jurists from the perspective of higher objectives, such as Ahmad Al-Raysuni's *Imam al-Shatibi's Theory of the Higher Objectives and Intents of Islamic Law*, are also part of this trend. But rethinking the Shariah has not been limited to academic tomes. The family life aspects of the Shariah have been radically transformed in Morocco. The new Moudawana, as it is called, has changed the traditional Shariah rules on marriage, divorce, inheritance, polygamy and child custody. The resulting family code establishes that women are equal partners in marriage, allows women to contract marriage without legal approval of a guardian, outlaws verbal divorce, allows women to claim alimony and the custody of the child, and raises the minimum age for women's marriage from 15 to 18, the same as for men. In Indonesia, the 'new Islamic intellectualism' movement aims to separate the Shariah from the political realm; and argues that the higher objectives of the Shariah should be used to promote civic society and participatory and accountable governance, from the grassroots, with full participation of all members of society.

The third sub-trend is concentrated around critical readings as illustrated by the quarterly *Critical Muslim*, an intellectual and literary magazine, emergence of Critical Muslim Studies, the Routledge series *Critical Concepts in Islamic Studies*, the Pluto Press series *Critical Studies on Islam,* the works of the late Mohammed Arkoun, Aziz Azmiah, and a host of books on Islam with the term 'critical' in the title.

Finally, the fourth sub-trend is based around the work of global reform-oriented organisations and individual scholars with world-wide influence. Organisations such as the International Institute of the Islamic Thought and International Forum for Islamic Dialogue, to name just two, have tremendous potential to accelerate the trend in a positive direction. The scholars who are seen as reformists, such as Khalid Abou El Fadl and Abdolkarim Shoroush, have developed small but devoted followings who could enhance this trend.

Implications

- A more contemporary, humane and inclusive interpretation of the Qur'an that is widely accepted by the majority of Muslim people would move Islam away from ossified tradition and towards a vision of justice, equality and beauty that is rooted in the Sacred Text.
- A reformulated Shariah, based on higher objectives, would reinvigorate Muslim societies and resolve many social, political and cultural issues.
- The work of reformist academics, as with most academic thought, would influence the coming generations who will be more willing and motivated to rethink problematic aspects of Muslim societies and develop viable solutions.
- If these trends reach take-off points they could have transformative affect and the future will not repeat the recent past.

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UNCERTAINTY AND IGNORANCE

Former US Secretary of Defence, Donald Rumsfeld, famously said: "there are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know." But there are also unknown unknowns. There are things we don't know we don't know'. The more we know, it seems, the more we don't know. All the disciplines of knowledge have failed to express this simple fact. Currently, uncertainty and ignorance are increasing at rates never imagined in the past. This can be seen through a simple surveying of the new arrivals at your local bookstore and looking at all the titles that either take on uncertainty, describe ignorance or are confounded by them. A quick search on the term 'uncertainty' on Amazon will produce at least 7,000 titles. Ignorance, young in terms of a trend, will not produce as many results, but the literature on the subject has increased since 2014.

This fact that uncertainty and ignorance have been increasing is not easy to see in everyday life. Manufactured fields of worldview and unfamiliarity buffers us from spotting the trends. Rejection of expertise and the threat of fake news feeds a stubborn individualism towards the construction of ignorance. Science is rapidly reaching the limits of its experimental observation while flawed systems of economics and governance are unable to accurately express the instability and turmoil of the contemporary world.

Uncertainty and ignorance are endemic in contemporary Muslim societies. Constant economic flux, political instabilities, sectarian differences and strife, threat of war, and Western influence fuel the trends. Of course, no one is monitoring the trends although they are quite evident. Uncertainty is often ignored or 'accounted for' by some vacuous or removed variable. This is the case for neoliberal economic theory and is becoming the case for technological development. The pursuit of development or new technology no longer retains its meaning of progressing

towards propensity or truth or attempting to improve humanity or society, it simply becomes about profit.

Uncertainty is also not one thing, nor is it definitive. Uncertainty is a multiplicity. It is a product of all the problems faced by Muslim societies interacting with each other. And it particularly affects the young – who may be coping with unemployment, alienation, concerned about the political situation of their states, and negotiating traditional outlooks with the demands of modernity. They have to find answers to a host of questions. Will they be able to transcend the problems of history? Will they be able to compete economically with a new age of technology-driven economics? Will their political and social structures be able to sustain themselves into the future and provide for them when they become a massive aging population? How will they interact with the West, and with each other? Uncertainty is more immediately present in persecuted Muslim communities the world over. It is a daily reality of life for Muslims in Syria, Iraq, Afghanistan and Muslims living in Myanmar. For the third largest Muslim community living in India. For Muslims abroad in the US and Europe, Islamophobia, rise of fascism, and prejudice accelerate this uncertainty.

Ignorance is as important a concept as knowledge itself. Yet no one is studying it. Ignorance, like any other subject or inquiry, does not exist in a vacuum. Each action taken by an ignorant actor is a chaotic move that sets off an unknown number of consequences. Accelerated pace of technological change generated chaotic behaviours which increase ignorance exponentially. There is never enough time to examine things carefully and properly; and hurried reactions generate uncertainty leading to more ignorance. The line between what is real and what is not real is becoming harder to distinguish. An accountant's missing of a decimal place, an engineer's improper conversion, the mistaken transport of a mosquito in a box of fruit from one state to another can unleash a host of complex problems. All of these minor actions that could be dealt with quite easily in the past are now becoming complex and generate their own levels of uncertainty and ignorance.

The production of ignorance has become a big business in the West. It has not only fuelled Islamophobia (see: Islamophobia and the Rise of the Alt-Right), but it has a potential for disrupting social, political and cultural dimensions of Muslim societies. Figures 1 and 2 show Facebook engagement with fake news and top stories during the 2017 General Election in the US. Now, what happens in the US happens in the Muslim world relatively quickly. So the prospects of these trends causing chaos, or exacerbating uncertainty, or driving developments in unknowable directions is real and relatively high. The potential for manipulation and the growth of uncertainty and ignorance increases with increases in access to internet and social media in Muslim societies.

Ignorance is now emerging as a bona fide field of study. American professor of history of science, Robert Proctor, gives a name to this study: *Agnotology*. More interdisciplinary and transdisciplinary academic work is emerging that examines the relationship of ignorance to education, science and knowledge production.

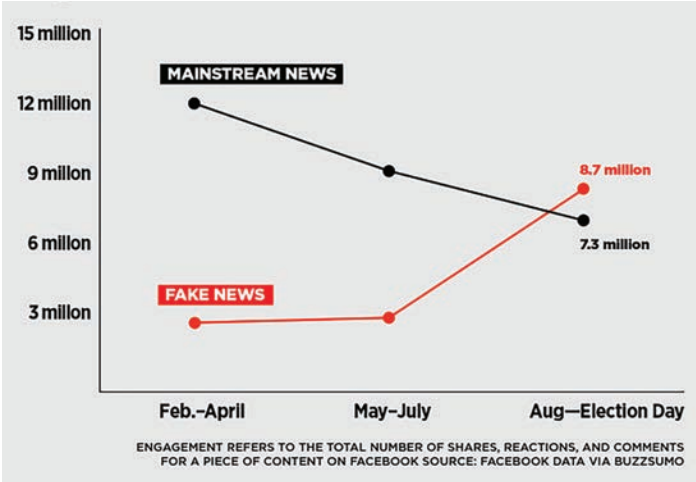

Figure 1: Top 5 Fake Election Stories by Facebook Engagement (Three Months Before Election)

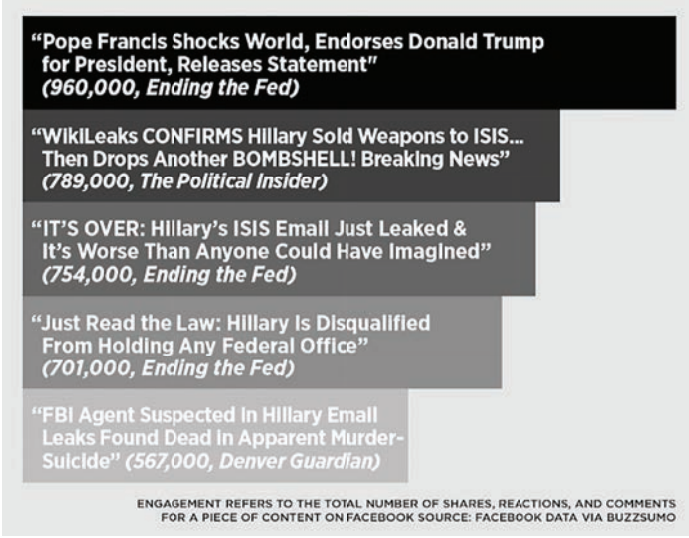

Figure 2: Top 5 Fake Election Stories by Facebook Engagament (three months before election)

Implications

- Ignorance is impacting Muslim societies as much as in the West. Muslim societies need to reflect on the inherent ignorance all around them and parse out what is known, what is not known, and what we know is unknown, and what we don't know we don't know.

- In Muslim societies, the move to compete on global markets or movements towards

Western style of governance and appropriation of Western culture will generate different types of ignorances and could plunge Muslim societies into deeper uncertainty.

- Ignorance and uncertainty drives Islamophobia. Understanding of ignorance will be essential to combat misrepresentations of Islam and Muslims. This knowledge will also be effective in competing on global markets and in being effective diplomats around the world.

- In these times of unbound ignorance and uncertainty, Muslim societies have a prime opportunity to build effective systems of education from the ground up. With an awareness and study of ignorance and uncertainty, a new interdisciplinary and transdisciplinary framing of educational infrastructure can see the return to the prolific influence the Muslim world had on the globe during the classical period.

- Muslim societies will be challenged by these outcomes as global warming, automation, ensuing war, and social and political unrest will grow beyond mediation and control. A proper awareness and engagement with ignorance construction and uncertainty can help Muslim states to navigate the challenges of Postnormal Times and usher in a new era of civilization.

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ANXIETY AND WEIRDNESS

The world is becoming weirder and weirder. The weirdness is a product of complex interconnections. An unusual drought in China causes a panic in the global wheat supply. This causes the price of bread to rise in the Middle East, especially in say Egypt and Tunisia. A vendor in Tunisia self-immolates in protest at the rise in prices and police harassment. This in turn fuels a revolution in Tunisia which spreads to Egypt leading to the overthrow of the Mubarak regime. Now consider that the original drought was caused by an overall weirding of global weather patterns that is the direct result of human impact on the Earth. The weirding is also seen in the melting of permafrost from the poles of the planet that are raising water levels. Potentially viruses trapped in the frost could again wreak havoc on the globe. As we produce more CO_2, the overall global temperatures are rising. Rising waters lead to loss of land and property. This mixed with political discontent causes mass migration to the highlands and affluent parts of the world. When the migrant refugees arrive in Europe they are greeted by xenophobic sentiment that boils over as Islamophobia that fuels the return of Fascism in the West. Now add Artificial Intelligence to the brew. And see how weird things get. Anxiety is an understandable side effect.

Anxiety is both a physical and mental issue. At its root is a physical depletion of essential neurotransmitters or the neuro rewiring of brain pathways: serotonin, epinephrine, and dopamine irregularities can lead to persistent cases of anxiety. But there is also a social factor to consider. Severe trauma can lead to an altering of the amygdala or hippocampus that control mood regulation and memory. Thus, bad memories can be a trigger of anxiety.

In Muslim countries, bad memories are not in short supply. The conflicts in Syria, Iraq, Yemen, Palestine, Afghanistan, Pakistan, Bangladesh, and the persecution of Muslims in Myanmar and elsewhere make anxiety seemingly inescapable. The number of children effected by these wars and conflicts is

planting the seeds for future poor mental health with PTSD cases amongst them. Such disorders unfortunately lead to a deep depression that nothing short of severe therapy and medications have a chance of overcoming.

Anxiety comes in many forms in Muslim societies. In contrast to Christians and people of no faith, Muslims suffer considerably more with death anxiety (Figure 1). Other triggers for anxiety include insomnia, tremors, and other mental conditions that result in behavioural issues and depression. Even, what some may see as, a lack of political certainty and stability is causing anxiety in Saudi Arabia, UAE, Egypt, Sudan and other countries.

Anxiety can lead to suicide, although suicide has innumerable causes. Globally, approximately 800,000 people a year commit suicide – that is, one person every forty seconds. Suicide is the number two cause of death for people aged 15-29 globally. Given that a huge majority of the Muslim population is young, this global trend would have a huge impact on Muslim societies. According to the Ministry of Public Health in Afghanistan nearly two thirds of the population suffers from mental illness, which includes 28% of Afghan women, who suffer from anxiety and acute depression. Each year, around 2,300 of those women and girls commit suicide. While there are no statistics for Iraq, we do know that in Sinjar, a city in Nineveh Province with a population of around 350,000, 50 people committed suicide in 2011. The number increased to 80 in 2012. Cultural pressures also sometime lead to suicide. There is a link between forced arranged marriages and suicide of girls in some Muslim countries.

The greater weirding of the planet and the anxiety that it generates is set to grow rapidly. The trends we can discern suggest that they will have a big impact on the futures of Muslim societies.

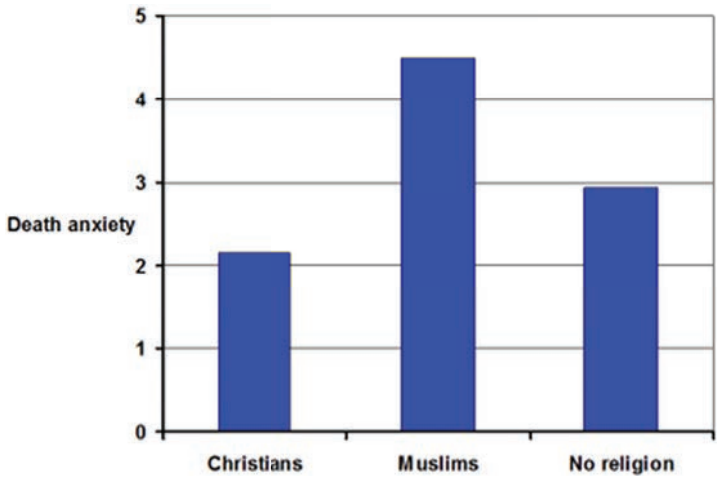

Figure 1: Rate of Anxiety Over Death Between Christians, Muslims, and Nonreligious

Implications

- Global weirding will impact Muslim countries just as much as other countries on the planet. To cope with global weirding, we need to appreciate the complexity and interconnectedness of a globalised world.

- Muslim communities need to work towards a greater acceptance of anxiety and its symptoms and potential violent side effects. A collaborative effort on the part of politicians, physicians, religious leaders, and the rest of society needs to determine what factors increase anxiety and suicides and what reforms can be made to reduce them.

- Religious intolerance and rigidity is a prescription for anxiety and rising tide of anxiety, mental illness and suicides.

- A whole generation of anxiety-ridden youth is set to emerge in the coming decades.

Table 1: Some of the Characteristics of the Studied Countries

Country	Adherents of Islam(%)	Suicide rate Males	Suicide Rate Females	Population size GDP	Gini	Coefficient
*Australia	1.1	20.1	5.3	1973100	28277	35.2
*Austria	4.2	30.5	8.7	8116000	28843	30.0
Bahrain	81.8	7.2	0.3	72400	18167	
Belize	0/1	0	0	256000	5748	
*Bosnia	42.8	20.3	3.3	4161000	3504	26.2
*Bulgaria	12.4	25.6	8.3	7897000	6738	31.9
*Canada	1.9	18.4	5.2	31510000	30429	33.1
*Croatia	1.3	30.2	10.0	4428000	8636	29.0
*Eygpt	94.1	0.1	0	71931000	3891	34.4
*Estonia	0.1	47.7	9.8	1323000	11836	37.2
*Finland	0.02	32.3	10.2	5207000	26614	26.9
*Ireland	0.5	21.4	4.1	3956000	32570	35.9
*Macedonia	33.3	10.3	4.5	2056000	5050	28.2
Mauritius	8.7	18.8	5.2	1221000	11046	
*New Zealand	0.4	19.8	4.2	3875000	31943	36.2
*Paraguay	0.02	3.9	1.7	5878000	4061	57.8
*Philipines	5.0	1.8	0.6	79999000	5231	34.1
*Portugal	0.1	18.9	4.9	10061000	18376	38.5
Qatar	7	7.5	0	0	610000	28467
*Romania	0.3	23.9	4.7	22334000	7468	30.3
St Kitts	0.1	0	0	42000	12175	
*Singapore	14.9	11.5	6.9	4253000	25588	42.5
*Slovenia	2.4	44.4	10.5	1984000	18687	28.4
Sri Lanka	0.9	43	17.9	19065000	3540	
*Switzerland	4.3	27.8	10.8	7169000	30723	33.1
*Thailand	4.6	13.5	3.7	62833000	7248	43.2
*Trinidad	5.8	22.2	4.7	1303000	11649	40.3

** Denotes countries involved in the second order (partial) correlations. Suicide rates are per 100,000 population in the relevant sex band*

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Emerging Issues

INTRODUCTION

Emerging issues are events or phenomena with the potential to have a positive or negative effect—and, in some cases, a dramatic impact—just over the horizon. Emerging issues are raw material of futures studies. They may be thought of as embryonic, fragmented, incomplete, concealed, and inadvertent data that may appear irrelevant at first sight but could have considerable impact on shaping futures. They are harbingers of change but may not strike an interested observer as such. The raw data, or signal, can be refined into valuable information and placed in appropriate context to yield futures insight. Emerging issues often precede trends, and can be seen as advanced indicators of novel developments in the rate and directions of trends.

Some emerging issues evolve into megatrends, such as *social media*. Others, such as the Muslim fashion or modest fashion movement, develop into more contextual trends. However, not all emerging issues become trends; many are aborted or remain dormant, such as electric cars, which first emerged in the 1980s and were almost banished but managed to remain latent to re-emerge in the 2010s. In other instances, emerging issues have become the focal point of a counter- or sub-culture, which relishes in the uniqueness of a particular phenomenon. This is the case with *Grindhouse Wetware*, which is a do-it-yourself bio-hacking club who experiment with inserting various electronics and computers into their own bodies. At some point, all trends were emerging issues—things with the potentiality to develop into more widespread phenomena.

In contrast to trends, emerging issues are not as broadly perceived, which is why they are also sometimes called 'weak signals'. As Jim Dator notes, trends seldom continue; and one thing that might stop them from continuing is interference by an emerging issue. As emerging issues are mere blips on one's perceptual radar, they have to be detected and worked out from their context before they become self-evident. As such, emerging issues are essentially propositions of potential change based on observation, intuition and imagination. Since they are emerging they

cannot be identified by simple and direct observation of change; they have to be spotted in their nascent state. A little intuition is involved in their detection; and imagination has to be used in perceiving their potential and probable development. This is why it is sometimes suggested that emerging issues have a 'weird' character: as 'they seem weird, we risk missing true breakthroughs, perpetuating our instinctive reluctance to expand our horizons'. And risk is indeed part of the game here. If someone foresees rightly the potential of a given emerging issue it could give him a strategic advantage and, therefore, high profits; while a wrong guess can bring equivalent losses. Not surprisingly, many approach their research in emerging issues like that of brokers in the stock market.

But emerging issues frequently refuse to be neatly boxed or encapsulated; their weirdness is due in part to the fact that they are located outside our framework of thought. Partly it is a product of the fact that they do not suggest themselves independent of the observer. Some emerging issues are dependent on one's perspective. An emerging issue for one person may not be an emerging issue for another; and emerging issues in one context or place may be an established trend in another context or place. Emerging issues, note Mendonça et al., 'are animated in the eye of the beholder and are always conjectures and hypotheses, not objective announcements of future change. They are not hard facts, but rather soft perceptual phenomena'. The significance of an emerging issue is always uncertain, and is frequently contested by stakeholders.

Emerging issues also serve as a means of strengthening as well as complicating trends analysis. They play an important part in focussing our attention towards potential or possible futures, and can even help in shaping a shared long-term vision. They can also work as 'focusing devices' around which previously independent, unrelated observations could be accumulated.

One of the key challenges of emerging issues analysis is evidence. Data to support emerging issues is often a lot less substantial than with trends. However, there must be some documentation or data, however insignificant, to support the claim for an emerging issue. This is where context and perspective become key. As with trends, it is essential to ask: for whom is this issue emerging? In what context is this an emerging issue? And the vital question: what if? What if a particular emerging issue – rule by algorithms, genetic modifications of human beings, apps for crime – becomes a fully-fledged trend? What if geoengineering were to be implemented? Who would benefit? Who ought to participate in the design, development, and deployment of such technologies? Who will such technologies harm? In general, emerging issues analysis raises questions rather than provides answers.

Emerging issues are often analysed using common futures methods, such as the *S-curve* and/or *Futures Wheel*, which both rely on extrapolating the effects of a single emerging issue. The dynamics of postnormal times demand that we embrace complexity, specifically the interconnected relations that bring about substantive transformations, while also emphasizing the importance of context. In short, we must move beyond mere extrapolation in order to foster truly unthought—rather than just unthinkable—possibilities. Consequently, each of the emerging issues we have identified is actually a complex ecology of various things, events,

and phenomena that have been clustered to denote potential shifts at systemic levels.

Many of the emerging issues we have chosen are not widely felt across Muslim societies, although some might be considered trends in a variety of contexts, including those with Muslim populations. Given that perspective and context are key when analysing emerging issues, it would be useful to place them within a topological framework. The framework we have used, the Menagerie of Postnormal Potentialities, is an integral part of the postnormal times theory. It consists of three symbolic components, each with its own particular potentiality: Black Elephants, Black Swans, and Black Jellyfish.

One of the main tenets within Postnormal times theory is that, in order to understand how the future may unfold, it is just as important to identify correctly what is happening as it is to comprehend how we make sense of what may be occurring. To put it bluntly, we do not think what we think because of what we see, we see what we see because of what we think. Therefore, it is just not enough to gather and process data, it is also necessary to reflect upon how do we infer conclusions from that data. And if this is an advisable attitude in general, it is absolutely required when dealing with emerging issues.

Thus, the menagerie acts as an ensemble aimed at challenging deeply held convictions, illuminating entrenched contradictions, and enlivening novel considerations, the Menagerie provides a rigorous and structured approach for modelling context-specific and perspective-driven effects of emerging issues. Each element of the Menagerie centres on a unique query.

The Black Elephants refers to our capacity to believe in a given outcome or conclusion regardless of contradicting data. Often defined as issues with high probability (and high impact) but low credibility, the Black Elephants forces us to reassess why do we believe in a given course of events despite the (wide) evidence that it may go otherwise. Why is it that so many deemed the last financial crisis to be improbable while signs where popping up everywhere? Why did so many consider Brexit almost impossible? Or more to the point, how did so many think that it was unconceivable that Trump could become the US president?

Hence, Black Elephants demand that we keep our preferences in check when looking at reality. In other words, to assess what we may be missing or just not seeing.

Black Swans, as coined by Nicholas Nassim Taleb, address a different kind of bias. They have to do with how our knowledge is constructed. Particularly in how we build patterns and infer conclusions. Thus, sometimes we are led to believe that something will be, appear or behave in specific manner foreclosing alternative options. Just like seventeenth century Europeans were shocked to discover black swans in Australia, because their prior experience had led them to conclude that swans did not exist in any colour other than white. And this is why it requires a different kind of approach to detect Black Swans. Most of the time there is nothing to be seen, it is precisely the absences, the discontinuities, the glitches, the noise or the data that falls out of the pattern that may help us to realise that there may be a Black Swan. And often when a Black Swan appears it is totally unexpected, therefore, it may be

a good departing point to wonder what do people think would never happen and, more important, why do they think so.

Black Jellyfish help us deal with a different kind of bias, the omission of elements that we deem as irrelevant. Quite frequently we mistake small for inconsequential. But as we have explained every issue has a modest origin and, only if the conditions are right, grows to become noticeable. However, Black Jellyfish force us to look for those small phenomena that, under specific circumstances, can converge and bloom (or develop exponentially) becoming a real challenge overnight, just like jellyfish. It has to be said though, that the real importance lies not in the black jellyfish capacity to propagate, but in the fact that we have previously considered them as too small, weak or distant to be relevant. In other words, the combination of previous disdain and actual growth are what make Black Jellyfish harbingers of chaos. Thus, a good starting question could be, what can or might lead to chaos or transformation?

In general, it could be argued that there is more evidence for Black Elephants than there is for Black Swans; and marginally more evidence for Black Swans than for Black Jellyfish. At the end of the day though, they all require a specific kind of enquiry, a particular look if you must, to detect them.

We are assuming that Black Elephants, Black Swans and Black Jellyfish are separate and discrete events. But, of course, they can be – and often are – interconnected and can occur simultaneously. We ought to be aware of our latent bias that may affect our judgement over them.

We are quite aware that we are staking claim to a definite subject position in our assessment of how these emerging issues might impact Muslim societies. We have grouped our emerging issues in different menagerie categories according to what we believe may be its greatest relevance for Muslims. Therefore, our emerging issues serve as signposts as well as provocations to move us toward unthought possibilities – to remind us that the least likely future is the one in which nothing happens.

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THE BLACK ELEPHANT IN THE ROOM...

THE BREAKDOWN OF THE EUROPEAN UNION

At the conclusion of World War II, the political and economic union that would become the European Union (EU) was formed to ensure Europe never again fell into the devastation of such a conflict. The union of 28 states is intent on the free movement of people, products, and capital throughout the continent. Unified laws assist with business and travel within the small area and avoid border and common waters disputes. The EU has stood as a successful model for other such unions like the Eurasian Union, NAFTA, and TPP. Currently, the EU is at its most fragile and its collapse stand to not only forever change the West, but send ripples throughout the global markets.

The conjunction of several elements is putting into question the continuation of the European Union, at least, as it is conceived today.

To name a few:

- The application of double standards in different places as seen in the economic rescue of Ireland, Portugal, Greece or Malta.
- The exigency of specific treatment for some countries, as in the case of the UK with the *Brexit*, including the reversing of some rights included in the European *Acquis*.
- The extremely invasive security policies developed against terrorism that are reducing privacy to a minimum.
- The exclusionary practices of allowing members to join for xenophobic and Islamophobic reasons as illustrated by the example of Turkey's application for membership.

- The incapability to move beyond the EU as a state club, preventing the attainment of a true political union.
- The monetary crisis failures and the restriction over European Central Bank capacity that have harmed the Euro.
- The option for austerity as a way out of the crisis, something that has hurt the intra-state and interstate cohesion.
- The implementation of the Transatlantic Trade and Investment Partnership (TTIP). The fact that its negotiation is classified from the public has raised all sorts of concerns, particularly in questions related to labour rights, export, sovereignty, environment and food safety, banking regulations or privacy.
- The secession movements in some states like in Scotland, Catalonia, or Flanders.
- Populism is on the rise in several European states upsetting political institutions therein. Alt-Right and Fascist sentiment is again gaining a voice in European politics. Germany, France, Poland, and Slovakia are among the most readily seen of many examples.
- The massive arrival of refuges from Syria and other places that is provoking the re-enactment of internal border controls inside the Schengen space.
- The rise of fascism and Islamophobia resulting in a Eurocentric and European Elitist sentiment throughout its member states.

Elements to Consider

The EU stands as the most accomplished regional integration project. Yet despite its achievements in the social, political and environmental ambits it started as an economic endeavour and, in times of crisis, economy comes on top again as the main priority. The Motto of the EU is "In Varietate Concordia" which translates as "United In Diversity", a contradiction in itself, since right now the EU is entangled in a paradoxical state as newer contradictions plague it:

- It seems that the same forces that are pushing for a reduction of the socio-political profile of the EU are also pressing to keep the economic status quo. Avoiding Brexit is a prime example of this.
- Some states that have been working hard to get into the EU are now developing policies that, at best, are contradictory with European legislation. Recent legislation in Poland, Spain or Hungary would come to the mind here.
- The TTIP is also straining the union, not only for the secrecy in the negotiation process but for the inherent contradiction that seems to be in the proposal, which appears to state that for the EU to grow there also needs to be less of it as well.

The pre-eminence of states as the main subject at the international level is also a growing source of stress. At the global level

most European countries are almost irrelevant, but the convoluted European decision making process is really preventing the EU from becoming a relevant actor. There are many situations that clearly demand a greater integration: climate change, migrants arrival, terrorism prevention, etc.; Yet, these states also show abundant signs of inadequacy for several intrastate affairs. Maybe because of this several nations aspire to statehood following a clue of former states like the USSR, Yugoslavia or Czechoslovakia.

Nonetheless, it also seems unfeasible that the country members could go back to a pre-union state. Not to mention the citizens that are enjoying a legal corpus, the *Acquis*, that has become the major guaranty for their rights against state interference will renounce to it willingly.

So, the whole situation can be summed up in a fundamental paradox: despite that many forces are pushing for reforms in the EU in different directions provoking a breakdown risk; none of them want the breakdown to happen. Yet, if the breakdown possibility is just a strategy to attain particular goals, it cannot be ruled out that it may eventually get out of the actors hands and occur.

Implications

The possible disintegration of the EU is a truly postnormal phenomenon. As it has been previously shown there are already many contradictions in place, this is a clear indication that the internal complexity of the EU is not properly addressed and this increases the possibility of an abrupt conclusion in the form of chaotic bifurcations.

Therefore, if this phenomenon progresses as it has been doing so far, we are moving into uncharted territory with a high probability of unexpected consequences happening

The implications for Muslims are diverse:

- To begin with, the Muslim factor is adding stress to the conjunction for the combination of different elements:
  - The presence of important Muslim communities in practically all EU country members with a diverse range of coexistence situations with other citizens.
  - The Muslim element as a menace, the need to prevent attacks from local Muslims that is becoming a real test for the European rights articulation.
  - The EU role in the Middle East, or to be precise, the European incapability to play a substantive role there.
  - The massive arrival of Muslim refugees from Afghanistan, Iraq, Libya, Syria and others that is upsetting the European borders policies.
- But in any of the possible scenarios, from strengthening the Union to the breakup, Muslims in Europe will be among the first impacted collectives, most likely for the worse, as they may become suitable actors to be blamed. Even more, that could

provoke the return of many Muslims to their origin countries; that would be a tragedy for second and third generation Muslims that know no other home but the EU place they were born.

- This would allow for increased nationalistic thought that would be molded in xenophobic sentiment such as Islamophobia.
- The end of the EU could have a major effect on the expectations of many young Muslims that hope to go there to find a better standard of living.
- But it could also be a stimulus for Muslim countries to develop alternative regional arrangements, potential economic unions and, also, not to depend on foreign aid.
- The retreat in social achievements may also hurt the diverse initiatives that are happening in Europe to develop alternative Muslim visions and models.
- At the international level, the disappearance of the EU would eliminate a reference in regional integration.
- It would also imply the vanishing of a possible interlocutor for Muslim countries in International fora.

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THE DESCENT OF WESTERN DOMINANCE

Empires rise. Empires fall. This is the history of human existence in a nutshell. For a long time, the West has dominated the world. This dominance has been seen in strength and power as well as in influence. The key to this dominance has rested in the power to define what is history or even what is thought. Language, culture, society, and civilization are all at the determination of the West. Thus the rest have had to meet these definitional ideals, lest they remain savage, foreign, other. Survival and success was only attainable in the West and in the reflection of the West. But the West has a dark side of hate and anxiety. Recently this darkness has come out into the light and appears to be the potential downfall for the West. The world has shrunk, but a new bigger world lies in technology, the cyberspace, and the future. The question remains, will the West in its own Westernness commit its own undoing and fall like the others have?

Elements to Consider

- The West's greatest contemporary display of dominance is found in its dominance of economics and global markets. The building of trade unions, systems of finance and markets, strong standard setting currencies, and denizens of wealth provide a most illustrious picture of the glorious West. Recent economic catastrophes in 2008 and beyond have shown the fragility of this benchmark. They also underline deep flaws in the capitalist mode of production and the danger of a dependence on Western global markets. When one nation hurts in an economic system, all feel the pain, but when the West falls hard, the rest of the world falls harder. Recent evidence shows that the falls will only become more regular and the return to normality, slower and more difficult. The collapse of the global economic order is not just the end of the West, but the end of all due to the interconnected complexity of our economic institutions.

- Likewise the philosophies that have developed our economic thought have invaded other ways of thinking and acting in Western societies. Cost-benefit analysis is used in military, social welfare, educational, and other forms of planning. Neo-liberalism is as much an economic thought as it is a life philosophy and a philosophy by which the West carries out all its initiatives.

- A central tenant of the West is independence and individualism. While the follow up of World War II left the West with an understanding that cooperation and institution building would be necessary to insure no repeats of such reckless violence, the contemporary trend is away from global order. The US election of Donald Trump and the UK referendum to leave Europe (Brexit) are showing a trend that could result in a rigid nationalism or extreme Westernism. These movements spell a potential un-writing of the last seventy years of progress.

- Greater and great encounters with the East through global conflict, refugees,

and global trade is unearthing fears of the loss of the West's whiteness. In response, old sentiments of xenophobia and Islamophobia are returning not only to public discourse, but government halls, and legislation. Alt-right and Fascist political parties are winning seats in Western parliaments. The internet is inundated by fascist propaganda as well as support groups for nurturing such extremism.

- A disconnect is growing daily as the Western way is seen as the right way. Contradictory and illogical decisions are made on the basis of it 'being the way it has always been done.' This mentality is souring foreign affairs and giving rise of Western discontent across the globe. It is also creating a hostile cyberspace where people removed of their social confined space are allowed to propagate the worst parts of themselves without consequence.

- Ignorance and apathy are the easy way out. While this used to be the way of the youth, now all segments of the population are overcome with uncertainty and the complexity of the system. Shutting off is the new pastime. The West has the convenience to not care about the rest and still believes it can remain the best with that attitude. Voting rates, birth rates, marriage rates are all downward trajectories. Inability to cope and the crushing pressure of anxiety rule the Western conception of hope.

- There is a general numbness felt by Westerners towards violence abroad. Images of extreme damage and loss of life are no comparison to domestic nightly news or images seen in movies or videogames. The pain felt by others does not affect the general public. The death of apathy is coupled with the rise in autistic disorders and neurological disorders in the West.

- The connected nature of the globe shows a hope for the influx of new ideas and influences from around the globe. This could seek to usurp the Western throne with something better or seek to improve the West from within to assure and extend its long reign.

Implications

- For the Muslim world, this makes the immediate future quiet difficult. The rift between the West and the other is only getting deeper. Hate and xenophobia welcome those who enter the West for education, escape, or any other hope of prosperity. Islamophobia will not only exist in the common speech but be deeply embedded in policy and culture. This will be the greatest challenge of Muslim communities in the West as it has been in the past.

- The increased Western-centrism will increase military conflict in the East and see little support other than that which advances the West's proxy wars with its rivals, those especially being Russia and China. Little effort in the way of clean up or humanitarian aid should be expected

from a self-centred West. All conflict in the world will also be most certainly blamed on the condition of those who live in the war-torn areas. The history and causes of these conflicts will only be exacerbated by this ignorance and deep wounds will take a long time to overcome.

- Economic markets are at their most fragile state and Muslim countries must take note of its dependencies and potential position in the event of another major global crisis. The oil market is a dangerous place to position all of one's chips and the West can quickly shut down demand with a return to "home produced" resources.

- Perhaps Muslim's looking to the West for the keys to advanced development is not the right way. Muslim countries need to take it upon themselves to reform educational, financial, and governmental structures to help their people and advance their culture and definitions of the prosperous life. Much can still be learned from the West and even more so in where they have failed.

- The crumbling of Western dominance will leave open several niches to be filled by the rest. This provides exciting opportunities for new Muslim innovations in technology, enterprise, and knowledge building. Much as the Muslim world fuelled the enlightenment, a new opportunity may be near at hand for the Muslim world to again advance global civilization.

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THE METAMORPHOSIS OF DEMOCRACY

Democracy. Rule by the people. A simple concept in theory. Anything but that in practice. An ancient thought, that since the Greeks has taken a long path, changing with time, growing more complex from revolution to revolution, government to government, and administration to administration. A participatory governance that, like a game, has had every rule and regulation meticulously debated. Who are the players, what does it mean to be a player, and how much power do the players have? What is the object of the game? What are the penalties? How is a winner declared? But most importantly, how is the game kept fair? Great Britain, the United States, France, Europe, South America, Japan, now the Middle East and Africa. A great deal of blood has been shed just so that a person can do that one simple symbolic act of voting. Debate over citizenship has taken participation from the rich few to the universal whole, despite race, religion, gender, or other details. Threats of tyranny and authoritarianism once stood against democracy. Now a new threat stands before the pillars of democracy. Technology. Social media and cyberspace. This new frontier of hackers and fake news stands before the most well established democracies of the world and threatens the legitimacy of all the final tallied votes. What stands on the other side of this may be a very familiar democracy, but it stands to be something new entirely. After all, the democracy we cry for today is very different from what the Greeks thought of in ancient times.

Elements to Consider

- The term democracy itself is a very fluid term that has, to some extent, been over used and perhaps exhausted of any true meaning. In the West, the term has been frequently discussed both in its advantages and disadvantages as a governing structure from ancient times through to the present. Over the course of these discussions and the practical application of the system, it has taken on different flavours and today resembles only a fraction of its original meaning. On one extreme it has taken on

the meaning of direct rule by the citizenry. This is the case that every member of a given country, state, has one vote equal to all other members. At a regular interval all members meet to discuss the issues of the state. This obviously becomes a problem when the population of the state grows beyond the possibility of assembling all its citizens. A solution to this was the invention of representative democracy, or a Republic, where per a certain per cent of the population, one delegate would represent their voice at a state assembly. This form of democracy is seen as the predominant system used in most Western and developing democracies.

- Due to the nature of social groups, democratic bodies tend to polarize and the creation of political parties arises in state assemblies. A potential problem lies in the interest of a party becoming more important than the interest of the people the members of the party are elected to represent.

- One of the initial flaws of democracy that dates back to the origins of its discussion is the fear of 'the tyranny of the majority.' This is the case where a simple majority of elected delegates can rule a given country and thus alienate or disregard the other members of the population. Checks that have been built into certain democratic constitutions also bring up the fear of 'tyranny of the minority' where when an unsatisfied minority in a given government abuse their check powers to stall the government's actions and cause gridlock.

- A great struggle all democracies have gone through is who constitutes a member of a state, or a citizen. In accord with Western political philosophy this began with land owners, which were predominantly white men. Slowly the Western democracies outlawed slavery and provided for rights to women, children, and minority groups of race, religion, and other identification labels that have suffered persecution. In the contemporary world citizenship is still an issue as borders and religious differences can still rule one out of being a citizen of their home state. Beyond the legislation required for equality in rule, issues of participation and the hurdles therein are still issues for some of the largest and most successful Western democracies.

- Many of the contemporary democracies of the world flirt closely with being oligarchical. This is where a select segment of society tends to be members of state assemblies. This can come through elitism, nepotism, and solipsism and can lead to a political elite in a given society that lose sight of the interests of the common man. Money is also a major driver in this trend. It is becoming the case that only the wealthy are able to withstand the monetary demands of campaigning and holding on to power. Business interests can also buy elections by funding a candidate with the expectation that their interests will be at the top of a given delegate's priorities over that of his constituency. Some legislation has been introduced to curb these influences but debates of personhood and corporations loom as a threat to any attempts to control these influences.

- Democracy has often been turned into a label of the good guys in Western history. It was democracy v. totalitarianism

or democracy v. communism, us v. them. Because of this the stage of global politics is rife with contradictions. Democracies support ruthless dictators because they pledged their swords against the bigger enemies of democracy (the USSR). Now that the cold war is over, how does the map realign? How does a democracy who supported a dictator who fought for them respond to the cries of that dictator's people for democracy? Weapons and supplies that democracies sent out to fight the great enemy are now being turned against them. Meanwhile money is the new determiner of allies and enemies, so how does a country like the US support China, a totalitarian communist state with millions of dollars in trade, while also supporting China's enemy Japan, a democratic perfection experiment of the United States, in a common land dispute?

- Advancing technologies are writing a new chapter in the story of democracy. Now the entire world can meet in one cyberspace and talk about anything from cute baby animal videos to mutual fascist sentiments. Cyberspace and social media are allowing for the once impossible idea of direct democracy to be feasible once again, despite population. New technology makes voting easier and dissemination of important legislative facts easier as well. But these platforms are fragile. Fake news and those seeking to undermine democratic processes (be that an enemy state or organization).

- Though originally, democracy allows for a degree of flexibility. As newer democracies are being formed, there is a tendency to attempt to use old structures as a 'copy and paste' template to new states. At the present these tendencies are riddled with Western assumptions about culture and do not so easily translate into other languages and societies. For instance the need for an iron clad constitution, a bicameral legislative body, and to the traditions of a parliamentary legislative body and strong, yet not absolute executive were created specifically for the United States at its founding. These concepts are very specific to time and situation. Obviously, in 2017 times are quite different. More flexibility is necessary. The systems of the Western democracies need to exist as a mold rather than a template. Allow the culture and society being democratized to make its own government and allow for it to correct itself, this is how the old democracies were built. The United States went through at least two democracies, the French are after all on their fifth republic! Democracy is not a premade meal to be placed in a microwave oven for two minutes and done. It takes years of discussion and trial to become a functional system of governance.

Implications

- Democracy may very well not be the best system of government for all societies or in the 21st Century. Democracy as it has existed for the last couple hundred years is at a major transition point and what will arise from it will be very different. Muslim governments should examine democracy very carefully to determine

if this system is functional in Muslim societies.

- Democracy in its nature brings people together to engage in discourse, this is something long overdue in many Muslim countries. This fostered polylogue is a major first step towards quelling tribal and sectarian disputes in many countries. In an uninhibited democracy, extremist views tend to be unveiled and moderate thought has a better chance of surviving in this environment.

- The act of voting provides for a great empowerment of a country's citizenry and leads to a greater public approval of advancing and reforming educational institutions. Democracy acts as an indirect motivator of education and stands to benefit Muslim communities. In turn this also creates more active Muslims in global politics and in carving out their identities at home and abroad.

- Developing democracies are always under threat of the greatest enemies of all contemporary democracies, that being corruption. The powerful tend to remain powerful even in democratic systems through their abuse of the system and playing of the game to assure they always win. This stands to be very detrimental to Muslim countries. Transparency must be the highest priority of Muslim democracies and tight regulations must be put forward on campaign spending and the use of influences other than the cries of the people by politicians. This opens up opportunity for creativity on the part of Muslim communities to make rule by the people work in their countries.

- The massive proliferation of internet access and social media throughout Muslim counties has already shown its power over social and political matters with the Arab Spring and other similar revolutions. It can also be a danger to society as has been demonstrated through the recruiting tactics of the so-called 'Islamic State'. Muslims need to be on the alert for those attempting to undermine their democratic systems. This could be other Islamic sects at home or abroad, countries worried about losing their dominant influence in the region (the United States, Israel, Russia, China, etc.) or even just a new form of proxy war (such as the one between Saudi Arabia and Iran).

- As democracies in the West metaphorically shoot themselves in the foot, there is great opportunity for Muslim countries. Democracy is a possibility, but much work needs to be done towards a proper governing structure for Muslim countries. This may require new drawing of borders. An attempt does not need to be pursued with the thought that this is the only chance. Governments must be fluid as populations in the contemporary world are also fluid. Without room for change, all systems of governance stand minimal chances of success in the future.

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THE CRISIS OF SOCIAL WELFARE IN MUSLIM DIASPORAS

One of the key pillars of any successful society is how it treats its worst off, especially the elderly who no longer are able to work for their wellbeing. A variety of social welfare packages have been devised the world over, but thus far have proven vulnerable to population fluctuations. Europe, Japan, and the United States in particular are witnessing increasing aging populations that are putting a bulk of their population into the retirement age group that is draining the social safety nets currently in place. Increased economic and jobs crises for younger people coupled with their vast outnumbering by the elderly needing to be supported is a rapidly approaching crisis. The old concepts of working for a certain amount of years so that one can securely retire is not sustainable under current welfare constructs. While Muslim societies are at their youngest point currently, increased modernization and borrowing of Western social structures stand to produce this same crisis once the now young population approaches retirement age. Where once the family was a strong unit for supporting the elderly and the young alike, Muslim populations are spreading out and with low job prospects and economic turmoil, they will not be able to give their parents the advanced care society ought to be capable of providing.

Elements to Consider

- Western populations mostly in Japan, Europe, and the United States experienced a population boom in the years following World War II. Now, that population is approaching, or already at, retirement age which is straining the welfare programmes currently in place. To add to the complexity of this situation, there is a low birthing rate in these Western populations due to trends in relationships, marriage, and family planning. Advancements in medicine are making it so that life expectancy is also on the rise. The welfare programmes created in the 1930s and 1940s were created on the premise that people would only live to a certain age, thus what was held back and saved up is now insufficient for the longer living elderly populations that are at their highest numbers.

- The neo-liberal ideal that has driven Western economics and politics has come into conflict with the idea of a welfare state, thus advancements in social programmes has been hindered by the conflict between free market capitalism and the debate over what the state's responsibility is to its citizenry.

- Old traditions of families living together in big houses are fading to the rapidly increasing speed of modern life. People are on the move, live more minimally, and are constantly on the hunt for the next job and the pursuit of the prosperous life. Without proper social programme platforms, the cost of living and medical care for the elderly continues to sky rocket and the global youth are unable to support their own debts and economics flaws, let alone the cost of their parents and grandparents.

- The crisis in social care does not exist in a vacuum, it is contributing to other crises like the global economic crises and the crisis of healthcare. Neoliberal ideals also hinder the granting of what is rapidly being conceived of as a natural human right to healthcare. Universal healthcare is unsustainable in the neoliberal framework, yet any deviation or mutation of such an endeavour is fraught with government corruption or unethical business practices on the part of insurance and pharmaceutical companies.

- The demands of the elderly will rapidly reach a breaking point and if social welfare platforms are not reformed or reconstructed, their majority population will have a massive effect on democratic elections and policy that will last another generation, possibly dooming the current Western youth. In this case a cyclical routine is established of caring for social welfare and then vehemently opposing it over and over again as the wellbeing of humanity hangs between this political Scylla and Charybdis.

Implications

- This may seem like a non-issue for Muslim societies, but the example demonstrated here can teach a valuable lesson to all societies in correcting and innovating the political process and in assuring the well-being of all their people.

- First of all, the massive diaspora of Muslims in the West will be faced with this crisis in the immediate future. Those displaced through the refugee crisis or simply wishing to pursue a better life in another place still have their families to either care for back in their home country or that will have to fit into this crippled system. The influx of Muslims into social programmes in the West will create greater strains on these flawed systems, so they will need to be a part of the search for a new solution. This may also add to the animosity presenting in Western populations and lead to increased xenophobic actions such as Islamophobia.

- While Muslim societies are at their youngest rates right now, that population will be faced with this same crisis in a generations time. If the birth rate follows the current trends in the developed West and modernizing globe, then a mass of the Muslim population will be faced with retirement and need for a proper social welfare programme that will not be sustainable by the youth of the future. Also if the Muslim family itself changes, becoming more spread out, the traditional care by the family model will also either not exist or be unsustainable. If life expectancy also rises, as it tends to do in modernizing and developing environments, this will only compound the issue at hand. Every new family, before children are considered, will be faced with upwards of four or more elderly to take care of. Now extrapolate this to step parents and distant family such as aunts or uncles who do not have children. It would go without saying that birth rates will drop and Muslim societies will not only be where the West stands currently, but potentially in an even more dire case.

- Any hope at starting up successful Islamic economic models or other government policy will be given its greatest test right off the bat. Dependence on the West's addiction to neoliberalism will further inhibit any progress in Muslim societies. If these societies cannot take care of their people then how do they expect to be global leaders or modes of influence in the rapidly accelerating future?

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THE ROBOTS ARE COMING!

Advancements in automation and artificial intelligence (AI) are leading toward the emergence of the age of robots. Societies will soon be seeing the implementation of robots for commercial, military, and humanitarian purposes where constant attention is needed for the steady ebb and flow of day to day life. Soon AI will reach a point of autonomy where human intervention will no longer be needed at all. Ethical debates will need to be held on the usage of robots in war and their place in society, be that as citizens, workers, or persons deemed inheritors of rights.

Questions will also arise as to the usefulness of humans and where they will stand amongst robots and the other living things on Earth. Robots as the creation of humans serve very human purposes, so in the end, perhaps Robots will not need human input, but what is their purpose without the humans that created them? These important points will produce a future society that needs to be thought about now.

Elements to Consider

- Robots are ready to hit the market to fulfil a variety of needs in society. This ranges from mundane industrial work on assembly lines to simplistic repetitive tasks in sterile environments such as laboratories. Their tasks are to work as a unit for mass production. The next order of robots are essentially toys. They are pets, friends, sex objects and devices that fulfil household tasks like cleaning or regulating the thermostat, daily work, and music or entertainment. Then there are robots used for war and intense scientific purposes (such as deep sea or space exploration). For the most part, all of these robots are already inundated throughout society. Some job loss will be experienced, but where they take jobs, maintenance and other jobs are created to meet the demands of growing businesses. Mass job loss comes when robots reach the point of self-autonomy where they can repair and create themselves.

- Robots of war are the source of a tremendous debate. Autonomous weapons systems are easily guised under the need for 24 hour surveillance in case someone else attacks us. The line here between this demand for security and offensive

weapons is quite murky. When would an autonomous weapon switch from defensive posturing to offensive measures in the interest of national security? What happens when the first glitch launches a pre-emptive strike? Likewise robot soldiers are quite attractive since they are low cost and indispensable. A worthy alternative to one's own countrymen dying in a war. How will society quell its tendency towards excessive military industrial complex spending when it no longer has to write letters home to the families of dead soldiers? How easy will war become when it involves button pressing and zero friendly casualties? Will the creations take on the thirsts of the creators? Will these robots be as addicted to war and violence as we are and what's to stop the declaration of war without human influence, after all numerous military actions are taken without the approval of a democracy's legislative body or people.

- Saudi Arabia has already granted citizenship to a female robot, Sophia. When will all robots be owed, or more radically demand, access to rights. Will we have to relive the struggle to end slavery, xenophobia, worker's rights, gender and age rights? When do we start caring about robot death and when are robots no longer slaves or lifeless soldiers? What about the issues we have not yet resolved. Many humans are not even entitled to these rights. Do human rights need to be established before we begin discussing robot rights?

- Robots like humans do not necessarily exist solely in physical form. Humans live varied lives on the internet and throughout cyberspace. Could not robots? After all bot armies have been developed to befriend and con those lost online looking for lovers or companions. More recently they befriend the alienated and propagate and flood cyberspace with fake news, altered photographs, and tear down the pillars of truth. This has even reached a point where bots have been created to hunt and destroy other bots. Bots can detect a bot trying to scam a human customer or propagate fake news. These bots can then distract or engage in conflict with the scam bots to prevent scams and flush out fake news. How far do these bot wars go? In cyberspace, what is real and what isn't? What stands to be lost? The human psyche? The fundamentals of democracy? Global order? Our private lives? Everything?

Implications

- The rise of robots has a two-fold immediate impact on Muslim populations. The first prong of this is the effects of unemployment. The use of robots in low skill manufacturing jobs greatly harms the low cost labour that corporations count on from developing countries. This will force the global job market to need to advance its basic skills sets and all humans will require higher level skilled jobs to survive. The second aspect of this impact comes in the form of robots of war. Since the West's

war on terror is still alive and well, the first killer robot missions are likely to be targeted at countries with majority Muslim populations. Even drones have accuracy problems, but even as those advance and the loss of civilian lives decreases, human error will always be a factor in state sponsored killing and mistakes will continue to be made.

- More autonomous weapons systems that no longer need human input are still designed by humans and their programming will be set to the old world extreme realist and neoliberal worldviews. Thus while defence will be on high alert, small chaotic factors will increase in frequency and the ability of justifying pre-emptive attacks leaves little doubt for strikes committed by autonomous weapons systems. These strikes will likely be at Muslim countries under the contemporary geopolitical thinking.

- Bot wars stand to be a major issue facing Muslim populations. As with all issues in cyberspace, Islamophobia and other xenophobic tendencies will be expressed by bots. Bots will be used to undermine social movements in Muslim countries as well as democratic processes. Governments can use bots to spread propaganda as well as outside organizations to add more and more fake news to the cyberspace. Bots can be more humanized attempts to recruit through social media and other platforms. Bots can also be used to fight back in exposing wrong doings and confront attack bots. Muslim awareness of bots needs to be addressed and through both the actions of Muslim communities and online platforms weeded out to prevent the undermining of the general public. As covert operations and back door deals used to be the old tactics of toppling regimes, cyberspace is the new arena for such actions. This should be seen in all its positive and negative lights to assure influence and control of this new world is not taken for malicious purposes.

- Important theological and sociological discussions need to be had about the use of robots in the household, be that as companions, maids, caregivers, or sexual devices. Huge ethical ramifications will arise with the robots and their addressing by Muslim communities will help in navigating through these postnormal times.

- Lastly, the polylogue of human rights (and by extension, robots rights) needs to be reignited and diversified in public, private, and government sectors. Muslim communities torn apart by conflict, forced into refugee situations, and huddled into persecuted communities only underlines the disregard of basic human dignity. These fundamental discussions need to be had and made progress on before they are decided by another, possibly more powerful and oppressive entity, that of the robots.

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BINARY CONFLICTS

At the beginning of the cyber age, an initial struggle existed between open communication and privacy. The new cyberspace was the new way to quickly get information out into the open and give voices to the silenced. But to what extent. Soon private communications flooded the internet and security became the first major push by governments engaging with the internet. Inherently the internet is a fragile system that depends on open communication and the attempts to build safeguards to privacy have only made the system more complex and open to chaotic actors. Stuxnet changed the game by taking cyberattacks from the stealing of information into the weaponization of code. Code now not only broke down safeguards, but could affect machines in the real world. Now code can be used not to steal and reveal secret data, but in effect change it, dumping the geopolitical system into a pit of chaos and mayhem. The line between cyberspace and reality has been broken and now code weapons could result in real destruction and possible death. The interconnected state of the world puts all at risk of this new tactic of war and threat to society.

Elements to Consider

- The internet exists in cyberspace. It is essentially a web of communication between computers. This web is a complex structure dependent on the dynamic ability to navigate various addresses so as to pass one instruction onto another computer. This allows users to access sites and then obtain data for a variety of uses. Initially this system is fundamentally dependent on free and open access for increased communication. Imagine a conversation and all the possible directions it can go. Conversation ceases when it is not allowed to flow into the next talking point. As the internet became a tool of governments, organizations, and persons who needed privacy, various guarding points were established to keep certain information out of the view of others. This again, is a fundamental contradiction to the internet's founding principles.

- A cyberattack is when a user undermines, gets through, or destroys one of these privacy safeguards to obtain information. Cyberattacks increased greatly as internet commerce arose and personal financial information could be obtained so as to steal one's identity. Cyberattacks have been used maliciously to steal government information or to blackmail persons of interest. Cyberattacks have also been used by whistleblowers claiming to open back up the internet and deliver information they deem the right of the people that has been hidden from them by their government.

- Stuxnet was a computer virus or worm that changed the rules of the game. UN investigators noticed malicious code on the computers running a uranium enrichment plant in Natanz in Iran. They discovered that the code had spread onto many computers but was only activated by the specific computer and number of computers found controlling centrifuges in the Natanz plant. The code was not intended to obtain

information from these centrifuges but prevent them from working properly. This is just the beginning of what a little programming can command a computer to do.

- With increased connectivity and automation of essential functions in society, weaponized code could shut down an entire factory, cause the faulty construction of products, shutdown essential services, create chaos within emergency medical services, cripple hospitals, launch weapons, strangle economies, wage war, the sky is the beginning, there is no limit.

- Hackers responsible for committing cyberattacks are hired by individual governments to play a sort of cat and mouse game of stealing secrets and potentially putting false data in place of real data. Thus major plans could be compromised and initiatives torn apart from within.

- The increased employment of these hackers is changing the face of warfare and now war is simply lines of code sent back and forth, undermining security measures, exposing information, and potentially changing information, and commanding computers to initiate or shutdown essential processes. Some have described this as the First World Cyberwar.

Impact

- Stuxnet is the perfect example of the weaponization of code being used against the Muslim world. Something so simple as not wanting Iran to get access to nuclear weapons was the only clear motivator for such a groundbreaking attack. With increased automation and AI on such weapons, weaponized code could target multiple computers around the world and not simply obey the order specified by the creators of Stuxnet. Simple code could infect many computers throughout the Muslim world ranging from the promulgation of fake news to denying access to any outside communication.

- The Muslim world must be aware of the increased connectedness of Muslim countries and continued proliferation of Wi-Fi and internet services within. Discussions need to be had to the ethical use of the internet and how to keep it safe from potential cyberattacks. A delicate balance needs to be reached between securing the internet and still allow free access to information and platforms of expression.

- Muslim countries need to invest in both the infrastructure and education needed to properly equip the Muslim world with cybersecurity knowledge and technologies to assure the successors of Stuxnet do not cripple their nations or their people.

- The rate of automation and the increases in AI technology must be closely monitored in Muslim countries as dependence on these new systems of convenience only make their taking away more crippling to society. Education on cybersecurity is not strictly a government issue, but a societal one that everyone must be made aware of. After all, Stuxnet was traced back to the simple act of finding a flash drive and plugging it into one of the Natanz

computers which allowed the virus to infiltrate the entire network (and eventually the internet). Basic knowledge of phishing and hacking scams keeps the whole network and internet safer and running more smoothly.

- Muslim countries may consider partnering with outside technology firms to build up a proper internet infrastructure and employ hackers of its own for proper cybersecurity while the population is educated on the matter.

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REVOLUTIONS IN FOOD

As the world rapidly accelerates so do all the aspects of our life and culture, especially the food we eat, how we eat it, and how it is developed. With advancements in technology could problems such as global starvation be well within the realm of solving? The new name of the game is to quickly produce food instantly and in large quantities at little expense monetarily and to the environment. As our consumption is leaving a major dent in the Earth's resources, the quickest most sustainable method is to change our eating habits and introduce new foods into our diet. Genetically modified foods (GMF) are organisms that have had their DNA altered to increase attributes of the food (size, yield, taste, etc.). Farming has become more automated, robotic and creative in its applications. Any food can be grown in any climate and deserts can be converted into food banks. Lastly in the lab meat and other organic substances can be grown without the need for large amount of land or chemical production. The new methods and techniques introduced in the coming years will make food more available and also decrease energy and disposal wastes in the process.

Currently the following methods are transforming food as we know it:

- Introduction of new foods into cultural diets. For example insects and bugs are becoming gourmet dessert dishes. Other examples are found in how, due to changing weather patterns and rising water temperatures and acidity, new species are finding themselves in the situation of apex predator. Jellyfish have recently greatly increased their oceanic populations and will also be entering many sea food dietary cultures.

- Pill and snack-patch forms of food allow for quick snacking and absorption of necessary nutrients and hunger quelling on the go.

- GMF and GMO are food products that are altered genetically to bring out certain phenotypic expressions. These genetically engineered methods change an organism in a way that is not found in traditional crossbreeding, mating, or natural recombination. This could increase size, yield, and repeatability for food and also change flavours and life span of products.

- New Vegan practices are on the rise to create milk and dairy products without the use of animals. Cheese, milk, and egg whites are of proteins that are synthesized in a lab.

- Meat is also being produced in the lab in a method similar to the production of new organs from a host/donor tissue source. This is also known as Cultured Meat or Clean Meat.

- Genetics can remove allergenic trigger proteins and other such harmful aspects of food that could set off reactions in humans. The hypoallergenic peanut is the key product in this hopeful mission.

- Farming has undergone a number of new developments to use less land and be more sustainable for the Earth. Greenhouses can be put in deserts where nothing else was thought to ever have been derived from the land. Farming can be conducted in the absence of light and in points of limited water access.

- Utensils can be used to add flavour and spice to dishes and they will soon be edible as well. Drink your tea and eat the cup as well.

- Finally robots can be chefs and food advisors.

Elements to Consider

- 28 countries planted 170 million hectares of GM crops in 2012, but most crops were grown in just five countries: the United States, Brazil, Argentina, Canada and India. That same year the global value of GM seeds reached the 15000 US$ millions.

- The most used GM crops are: soyabean, maize (corn), cotton and canola crops. Of some 30 traits that are currently engineered into plants for commercial use, the most popular are those that confer herbicide tolerance, insect resistance or both traits together.

- Argentina though, has focused on generating plants more resistant in a warming world, like a drought tolerant soyabean. As it has been already mentioned, one of the most frequent traits of GMF is to make it resistant to herbicides; that has provoked that many farmers have used herbicides beyond what would be advisable, if nothing else, for the environment. But making species that could adapt better to climate change consequences may be a more needed approach.

- There is a widespread concern that transgenic plant fields cannot be contained and, therefore, their genes pass to the wild with unknown consequences, but with a potential reduction in genetic diversity,

- The main problem of GMF or GMO industries is branding, for the bad connotations associated with their products and themselves. Certainly, corporations like Monsanto have contributed to that bad reputation, but the main consequence is that now the debate is totally biased. That is why companies like Ginkgo Bioworks have opted for a transparency policy promoting events like Consumer Bio.

- China's policy on GMF or GM crops has been very restrictive so far. Up to now it has authorised GM cotton and the last permitted product was papaya in 2006. But it seems that this is about to change with big acquisitions of GM products.

- There have been some critiques that rich countries debate on GMF is hypocritical as they do not face malnutrition problems or can afford a higher price for biological food. But GM crops could offer some positive effects in developing countries, among them:

  - Increased production derived from the use of plants resistant to drought or pests.

  - Reduction on pesticides use.

  - Nutrition improvements by using provitamin enriched crops (like with provitamin-A-enriched rice).

The following foods seem to be emerging common delicacies in future meals:

- Insects – Locusts, ants, grasshoppers, and other bugs already considered delicacies in certain parts of the world could rise in population as global temperatures increase. They may be one of the more readily available sources of protein in the future.

- Jellyfish – Rising sea temperatures are creating greater instances of jellyfish blooms and overall dramatically increasing their population. Jellyfish will take many forms as a staple for future meals. Jellyfish salads, fried, or even in a casserole or stew could be as common as any other fish or meat product.

- Algae – Much like seaweed it thrives in rising water temperatures and could outgrow its natural predators. Algae could be seen simply as served dried in sheets as crisps or in salads and sushi or could be ground to make flavoured water, shakes, or teas.

- Lab-Grown Meat – As consumption outgrows the land mass needed to support cattle farms, much as organ and tissue donation materials can be grown in the lab,

the technology for growing cow, chicken, and other meat tissues in a lab is developing.

- Cobia and Faux Fish – Cobia is a larger and much more easily farmed substitute for salmon that could become popular in response to over fishing. Much as veggie and vegan burgers are an example of fake meat products, similar materials and flavour enhancers could produce faux fish products.

- Allergy Free Foods – Research is being conducted in genetic manipulation to remove proteins that trigger allergic reactions in humans. This is being carried out on peanuts, but could be replicated for other common food allergens.

- Vegan Cheese – Various genetic and chemical research is going into producing contradictory foods. Cheese made without milk or animal products, made without animals producing them, will become more and more common as veganism continues to increase in popularity.

- GMOs and 3-D Printed Foods – Foods can be genetically modified or printed from raw materials on a 3-D printer in the future. These GMOs could increase yield and taste, but also bring back extinct or endangered foods such as bananas or other foods that could not be sustained in a changing global climate.

Implications

GMF or GMOs may be the most controversial aspects of biotechnology. The aggressive policies of companies like Monsanto or Syngenta plus the campaigns of organizations like Greenpeace, Friends of the Earth or even blogs like Food Babes have put these GM products in the spotlight. And both sides have arguments and counterarguments; thus:

- GMF may be our best shot at feeding a growing population. Yet, at the same time, some of the manipulations, as in the resistance to herbicides, are provoking an overuse of these products with snowball effects on ecosystems, other species (some of them very much needed as bees) and, ultimately, us.

- Some of the modifications, as drought resistance, can be very positive for poor farmers in semi-arid zones. But, because of the policies of some companies like Monsanto, that only produce sterile seeds, which makes the farmers absolutely dependent and subject to the factory supply.

- The possibility of generating crops with added values (alimentary of healthy) could be an opportunity to improve the life quality of many people in developing places. But the spread of modified species into the ecosystem endangers the natural wildlife.

- The fact that the American Supreme Court has only accepted the patents over modified species is considered a victory for those advocating the publicity of natural species; but the sentence specifically allows the patents of artificially modified species and that opens an alternative window for patenting all sorts of variations over natural species.

The debate over GMF is particularly relevant for Muslim countries as many of them combine two challenging conditions: growing population with deteriorating environmental conditions. In short, they will be needing GMOs greatly.

Given the geopolitical situation it is not unthinkable that GMF will be used as a strategic resource. For instance, restricting the access of some countries, if nothing else, to promote internal dissension among Muslim states. The case of Argentina shows that there may be alternative ways to promote research in this field and, initiatives like BIOFAB can ease the progress of other countries in this ambit.

All in all, Muslim countries should take this question as a top priority for them.

As revolutions are being made in food, many theological questions will also need to be discussed in Muslim communities. Questions of whether or not meat and other products grown in a lab are in fact meat and consistent with the codes of halal will need to be discussed as well. Are snack patches a violation of the fast? Do any of the old consumption laws need to be rewritten or reinterpreted?

Muslim societies can benefit from the use of the any-where green houses in uninhabited desert lands.

Muslims as well as the rest of the world can gain greatly through the new techniques in food that are sustainable and reduce waste throughout the globe. More research and food product investigation needs to be carried out by Muslims so that future Muslim communities are accounted for with whatever form food may take in the future.

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THE FIGHT FOR MUSLIM FEMALE INDEPENDENCE

The outlook of the past few decades for Muslim women has looked grim with seemingly insurmountable sexism, denial of rights, and the recent use of women as sex slaves by Boko Haram in Nigeria and within the territories occupied by the Islamic State. The strength and amount of noise being made by Muslim women gives a rather different view on this matter. The peaceful wave of civil disobedience expressed by Muslim women throughout the West and Muslim societies in Africa and Asia not only shatters the stereotype of the oppressed woman in Islam, but tells the story of a remarkable resilience and progress in Muslim societies. Throughout the Muslim world, women are calling for a better interpretation of the Qur'an and Shariah law that is removed from the old patriarchal world of a society possessed by men. Muslim women stand up for their right to ownership, the right to self-determination, and rally against a toxic masculinity that resides at the centre of extremist propaganda. Muslim women are being educated at their highest rates and remain dedicated to the tradition and identity of Islam, yet stand up against discriminatory laws and cultural practices. The emergence of the Independent Muslim female aims to make Muslim society gender equal and respect all human dignities.

Elements to Consider

- Major movements of Muslim women living in the West and other parts of the Muslim world are questioning old interpretations of Shariah as well as patriarchal language. Women's right to self-determination is being refined while spousal ownership is being widely overruled. Gender roles in the family and society are changing and becoming more egalitarian, particularly in urban regions. Marriage and divorce are being seen as mutual partnerships with both husbands and wives as equal partners.

- In Tunisia a sexual harassment claim at work has turned into a national movement as Muslim women call for Islam and Women's Rights to be in line with each other through their progressive reading of Muslim teachings and holy texts. Since Tunisia's revolution a new constitution and a loud voice from Muslim women have called for greater gender equality in the democratic process, work place environments, and in domestic violence and spousal abuse. This movement has spread throughout the Muslim world to places such as Cairo and Jakarta.

- Following a series of horrific terror attacks in Muslim societies and the West, women have begun voicing their concerns about extremism in Islam. They blame a toxic masculinity that infects culture and even prevents female voices from having influence in the debates over extremism and terrorism. They call for an end to the pressure and anxiety caused by a masculine ideal driven global culture and greater female involvement in the discussion on extremism, terrorism and policies to combat them.

- The emergence of female *ulama* and Imams is set to have a major impact on Muslim societies. Qualified female scholars in Morocco, Egypt, India, Pakistan and Indonesia are questioning orthodox exegesis of the Qur'an and Shariah, and have argued that Islam and women's rights can coexist under more progressive interpretations. As more and more women qualify as *alims* and Imams, tradition and orthodoxy will come under increasing pressure to change.

Implications

- Muslim women's push towards independence can lead to a toppling of old masculine and patriarchal ideals and systems. This could lead to further reform in Muslim societies and can be a strong landmark in opposing out-dated and extremist views of Islamic teachings.

- The success and increased presence of such movements will lead to an increased role of women in Muslim society. Even more educated females will lead to greater female activity in politics and society and the production of more female leaders of Muslim countries. Muslim society stands to become a beacon of gender equality.

- Justice will become more complex in Muslim societies. With increased recognition of women's independence, sexism and harassment will become part of law and the new interpretation of Shariah in Muslim countries.

- Greater equality for women opens up a whole new influx of workers capable of all ranges of labour and innovation. Women's involvement in education, economics, science and technology will provide new perspectives and greater opportunity for innovation.

- Female input on matters of extremism and terrorism could provide the necessary ingredients for a return to moderation. Greater participation of women in public life, including as scholars and Imams, could solve social issues that give rise to such xenophobic and extremist groups as the Islamic State and Boko Haram. A myriad of problems can be ushered towards resolution through the necessary discussion and re-examination such movements could engender in Muslim societies.

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RECONSTITUTION OF THE MUSLIM FAMILY

The most basic unit of social organization is the family. However, like other structures in postnormal times, the family itself is changing. Greater tendency towards individualism is giving rise to smaller, more spread out families. Grandparents, aunts and uncles could live in entirely different parts of the world. Traditional roles of fathers and mothers are being challenged. The raising of children is growing more hands off. Relationships themselves work radically different with the advent of social technology. Advancements in science are changing the limits of fertility, multiple mothers and fathers could constitute a family. War, Islamophobia, and the interconnections of the internet are spreading families apart and creating new families out of biologically unrelated peoples. The very concept of family and home are being redefined. It is now possible for a child to have three parents. Grandmothers can give birth to their own grandchild if their daughters are infertile. These developments can have impact on Muslim families too. The Muslim families of tomorrow could be radically different in a world transformed through medical innovations.

Elements to Consider

- Concepts of dating and marriage are being redefined in Muslim populations. There is immense conflict between religious ceremonies and government entitlement. A Muslim marriage for instance may not be recognized as such by a European state. Shariah law also complicates a Muslim marriage as translating law from Arabic allows for different interpretations of some of the wording. Equality between partners is being pushed where once men dominated the marriage in Muslim society. Newer interpretations give more rights to women and make the social contract of marriage more open to both parties.

- Same-sex marriage is also an emerging occurrence in Muslim societies. While Imams and communities face the issue of gay relationships, the global trend of legalizing same sex-marriages would put pressure on Muslim societies – making it an issue that needs open and honest discussion in the Muslim world.

- Increasing divorce rates in Muslim societies means single-parent families will also increase in the near future. Long distance relationships are also putting strain on traditional marriage. Divorce itself is set to become more complex as both religious institutions and state often have different methods of dealing with divorce. Even different interpretations of Shariah law allow divorce either to be totally an act of the man or the right of the woman. Global migration is adding further complexity as couples married in one country may seek divorce in another.

- Advances in medical science provide for greater fertility possibilities. There is also the possibility not just of choosing the sex of one's child but also many of its characteristics – thanks to advancement in genetic engineering. There are deep and complex ethical issues here. Muslim societies need to be aware of the future problems these developments can produce.

- Amongst Muslim minorities, intermarriage will become more common. Multicultural and multi-ethnic families are on the rise in Europe and the United States. This would lead to rise in multi-religious Muslim families – with a variety of religious celebrations and practices in the home as well as families that do not all practice the same religion or hold the same beliefs.

- Online dating is a double-edged sword: it can be used to preserve tradition or open up a new era of relationships. For some, online dating is opening younger Muslims up to increased socially liberal life styles such as premarital sex and extended non-marital partnerships. For others online dating is the new way in which parents and children can continue the tradition of arranged marriage. Parents can work with their children to find suitable spouses through all the information provided by online dating profiles.

- War and conflict across the globe is tearing families apart. This forces a lot of children to take on the role of their parents following brutal war-torn conditions or forced migration. Refugees band together to make the arduous journey into Europe creating new communities – unrelated people form mini families that can be multi-ethnic and multi-lingual; and some of these families consist of children, none being older than teenagers. Family becomes more of a state of mind and at times what may be commonly referred to as friends, may be the strongest form of familial bonds.

- Increased internet infiltration and proliferation of social media usage is allowing families to be global. Members of a single family can be anywhere from the United States or Europe, to the Middle East, or South East Asia, yet they are all only a few Skype dial tones away from one another. Such platforms as WhatsApp and Facebook can keep families connected in ways once thought impossible due to distance.

Implications

- Muslim communities will need to revive and open up to more polylogue on social issues of the family. The concept of the multi-ethnic or multi-religious family needs to be brought out from the darkness of taboo discussion. Likewise, open families

and relationships and other non-traditional family units need to be discussed and not left to the devices of social stigma and ignorance driven xenophobia.

- Discussion in Muslim communities must address scientific advancements in fertility and the social impact this will have on Muslim communities that could have genetically modified children or same-sex couples producing offspring.

- The Internet and social media will continue to change the way people socialize, date, and the very mechanics of marriage and family cannot be removed from these technological advancements. Considered use of social media in Muslim communities can lead to preserving life-enhancing traditions and bringing families closer together in navigating postnormal times.

- The continuity of war and xenophobia in Muslim countries and communities will destroy family life, separate family members, increase orphans and hence put unbearable pressure on Muslim societies. The family, the basic unit of society, is becoming an endangered institution in war-torn and conflict ridden communities.

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THE BLACK SWAN ON THE WINTER LAKE...

POTENTIAL US – CHINA WAR

The tension between the United States of America and the People's Republic of China stands as one of the greatest displays of animosity shared between two states in the contemporary world. The potential threat of these two giants engaging in warfare of some kind carries massive ramifications for the world including Muslim societies. The rivalry being largely economic makes any potential aggression a dangerous matter for global markets and could bring about economic catastrophes that would ripple throughout the world. The advanced nature of warfare in the contemporary age would also make for war unlike any other seen before with cyber and robot weapons being at the disposal of both sides. This potential war and its aftermath will forever change the global landscape.

Elements to Consider

- The Presidencies of Xi Jinping and Donald Trump have brought potential hostilities between the US and China to the most extreme seen since China's opening up to the US in the 1970s. Both Presidents have increased nationalistic pride in their respective nation driving national exceptionalism. Both have also shown intentions of putting more money into the development of the most advanced militaries of their time. Their industrious attitudes and belief that they are the rulers of the known world only exacerbates the feud between the two countries.

- US-China rivalries have existed well into China's first opening up to the West in the eighteenth century. Today this rivalry

continues over economic dominance, military influence, and global impact. The US and China have budded heads over China's land claims throughout the Pacific, over military operations in the Middle East, over the international approach to North Korea, and over the narratives produced concerning the events and fall out of World War II.

- Due to the potential devastation of this war, the first battle ground is likely to be in cyberspace. Cyberattacks between China and the US are not a new thing but are likely to increase in shock and destructive capabilities. Cyberattacks are hard to track to home states thus work of China or the US could potentially appear to be traced back to non-state entities. Stuxnet has shown us that cyberwar could not only result in the disruption of the internet and ecommerce, but also in physical processes or data alteration. Major dams and other engineering projects in China as well as essential commercial and healthcare operations in the United States could be crippled by the click of a button. One computer virus could result in the halting of either sides entire military industrial complex. Cyberwar could result in global crippling without boots being put on the ground.

- As has been demonstrated via war game simulations and each country's posturing, a conflict would result in troop deployment. Since the posturing has largely occurred in the Pacific and China has built itself a satellite of other islands as a buffer, early conflict will initially entail trade blockades and fighting on China's neighbour's soil. South East Asia including the Philippines, Indonesia, Malaysia and Singapore will likely be the initial venue for these first strikes.

- Three proxy conflict sites will be major chaotic players in the greater China-US war. First, the strait of Taiwan buffers mainland China (PRC) from the Republic of China (ROC) to the island of Taiwan itself. The US has made clear that any attempt to cross the strait by the PRC military is considered an act of war and the US is obliged to interfere for the ROC's sake. Second, the situation in the Korean peninsula remains a point of contention for China and the US. Technically North and South are only in a cease-fire and the Korean war of the 1950s continues. If North Korea is to cross the 38th Parallel, the United States is obliged to assist South Korea in the event of invasion. Meanwhile China has been trading with the North so conflict would naturally reignite. Lastly, Japan is constitutionally designated as a peaceful state that will hold no standing military. The Self-Defence force they have built in place looks more and more like a military in these turbulent times. Various Prime Ministers of Japan have expressed interest in repealing the constitutional article preventing Japan from building a military.

- The actions of Russia and North Korea will be major determinants of how long and destructive this conflict will be. Both have traditionally sided with China in international matters, but both face major losses and devastation if engaged with either the US or China. Their actions will begin the ripple effect of the globe having to take sides in this battle which will further split Europe and the Middle East despite their own internal conflicts.

- Due to the large populations both in China and the US, major loss of life and serious deterioration of living conditions would occur during and after such a conflict. The ability for the rest of the world to aid in this recovery would be greatly diminished and reconstruction would be long and difficult.

Implications

- The Muslim world would be greatly affected by this seemingly distant conflict between the US and China.
  - Economically China and the US are major trading partners for Muslim countries. A trade war would erupt between Muslim countries and over whether to support the US or China.
  - US military bases are positioned in many Muslim countries which could see increased troop presence for engagement with China.
  - This conflict is likely to begin as a combination of proxy and cyberwars that could result in the employing of Muslim fighters and Muslim countries. These wars could be potentially very destructive and even cyberwar could lead to infrastructure and societal disruption on a megascale.
- Oil demands would increase throughout the world leading to a boost in OPEC economies, but embargoes and sanctions could lead to forced increases in prices and chaotic actors being increasingly present in the market.
- There is a real threat of thermonuclear war and if strikes occur between China or the US, a domino effect could embroil Muslim countries in these same wars or increase pre-existing nuclear tensions, for instance, in the Middle East.
- Muslims living in the US or China could become targets of Islamophobia or other such racial discrimination that could lead to scapegoating or detention through the duration of the war as terrorist combatants for either side.
- Xinjiang province, a majority Muslim population within China, will continue to see a hardened military occupation and persecution under the Chinese Communist Party (CCP) and would easily be targeted for internal failures during a conflict with the US.
- The result of this war will redefine war in the coming era and reset the geopolitical and economic structures that hold the world together. Muslim communities will be just as crippled as the rest of the global population in facing economic hardships and potential aggressions during and in the aftermath of a US-China War.

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IGNITING FUSION

Fusion power is the generation of energy by nuclear fusion. Fusion reactions are high-energy reactions in which two lighter atomic nuclei fuse to form a heavier nucleus. When they combine, some of the mass is converted into energy in accordance with Einstein's formula $E=mc^2$. This major area of plasma physics research is concerned with harnessing this reaction as a source of large scale sustainable energy. There is no question of fusion's scientific feasibility, since stellar nucleosynthesis is the process in which stars transmute matter into energy emitted as radiation.

In almost all large-scale commercial proposals, heat from neutron scattering in a controlled fusion reaction is used to operate a steam turbine that drives electrical generators, as in existing fossil fuel and nuclear fission power stations. With current technology, the reaction most readily feasible is between the nuclei of the two heavy forms (isotopes) of hydrogen – deuterium (D) and tritium (T). On a mass basis, the D-T fusion reaction releases over four times as much energy as uranium fission.

Elements to Consider

- Fusion research is led by the European Union, the USA, Russia and Japan; in a second level, but with vigorous programmes also underway, are China, Brazil, Canada, and South Korea.

- Given its energy dependency, the EU has devoted considerable resources to fusion, up to the end of the 1990's the EU spent almost €10 billion. Currently just the ITER initiative (an international nuclear fusion research and engineering megaproject) is budgeted at €6.6 billion for the period from 2008 to 2020.

- Initially, fusion research in the USA and USSR was linked to atomic weapons development, and it remained classified until the 1958 Atoms for Peace conference in Geneva. Following a breakthrough

at the Soviet *Tokamak*, fusion research became 'big science' in the 1970s. But the cost and complexity of the devices involved increased to the point where international co-operation was the only way forward.

- The current leading designs to achieve a commercial use of this energy are the *Tokamak* and Inertial Confinement Fusion (laser) approaches. These technologies are not yet practically viable because currently it takes more energy to initiate and contain a fusion reaction than that produced by the reaction.

- *Tokamaks* are doughnut-shaped devices designed to cage ionized gases called plasmas in magnetic fields while heating them to the outlandish temperatures needed for hydrogen nuclei to fuse. *Tokamaks* are solid, symmetrical, and easy to engineer but progress with them has been quite slow.

- A contending approach, the *Stellarator*, has received a boost due to the research at the Max Planck Institute for Plasma Physics, in Germany. So far, *Tokamaks* have been better at containing the heated gas, but the *Wendelstein 7-X stellarator* may have solved this problem and a start-up may be already in progress

- The promise of fusion power is to meet the world's electricity demands while substantially reducing the environmental side effects: it would not contribute to acid rain or the greenhouse effect and there would be no danger of a runaway fusion reaction as this is intrinsically impossible and any malfunction would result in a rapid shutdown of the plant.

- However, although fusion does not generate long-lived radioactive products and the unburned gases can be treated on site, there would be a short- to medium-term radioactive waste problem due to activation of the structural materials. The volume of such waste would be similar to the corresponding volumes from fission reactors. However, the long-term radiotoxicity of the fusion wastes would be considerably lower.

Implications

Fusion power is seen as the great white hope for energy: concentration higher than oil or fission, limitless and clean like renewable sources. Whoever manages to make fusion feasible first will be in a strategically advantageous position. It will very quickly replace oil – drastically impacting oil producing Muslim countries. The states with the capacity to invest in this energy – Saudi Arabia, the Gulf states, Turkey and Malaysia – lack the will to do so. They may also be blocked by Western states with highly developed research programmes – just as some Muslim countries have been blocked from pursuing their own research in nuclear power. Cheap fusion also has the promise of surpassing some of the structural limits that restrict progress in some Muslim countries. The most feasible approach would be for a global Muslim coalition to develop its own approach to fusion power; probably the only way for Muslim countries to stay on top of energy resource races.

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THE END OF DISCIPLINES

The traditional categorical breakdown of knowledge into discipline fields has exhausted its benefit to knowledge production. Certain disciplines are increasingly being questioned for their viability. Can economics continue given its colossal failure in recent times? Does development studies still make sense? What is the significance of geography in the time of google maps? Can anthropology ever shake off its colonial roots? What is the difference between physical chemistry and chemical physics? When does biology and physics cease to be distinguished or at what point does philosophy become art and art the only possible portrayal of philosophical thought? A staunch dependence on old disciplines is beginning to limit human ability to understand and pursue truth. Moreover, the conventional approach to problem solving, which required problems to be isolated and then studied for potential solution, is proving inadequate in complex contexts where problems are interconnected. Hence, the emergence, and proliferation, of programmes in multi-, trans-, and interdisciplinary studies. Educational institutions are merging departments or getting rid of old disciplinary boundaries altogether. Indeed, disciplines are being reorganized and restructured within all fields of knowledge; and a movement towards new paradigms, with trans- and interdisciplinarity as their foundations, is clearly discernible. The lines between natural sciences, the humanities, business, medicine, and the arts are blurring; and a more holistic approach to education and integration of knowledge production is emerging.

Elements to Consider

- Once considered improper among academics, increasing interest and development of interdisciplinary programmes (the integration of various disciplines and the use of their tools to synthesize knowledge) and transdisciplinary programmes (attempts to transcend disciplines and use a holistic approach to problems that span

several disciplines and techniques) is now widely being accepted by universities and institutions of higher learning.

- Some universities have begun to rewrite the traditional structures of education. For example, following the 2008 financial crisis, Arizona State University in the US underwent an interdisciplinary reconfiguration of the university. This merged and created new departments more appropriate for a complex, interconnected world and future careers. Similarly, South Illinois University in Carbondale is eliminating discipline-based departments across campus to increase the synergy of educational knowledge building across the whole university.

- The end of disciplines provides for an opportunity to not only reform education, but overall relationship of societies with education and knowledge production. As disciplines once represented the organization of all that is known, knowledge itself is changing. Ignorance for instance has not been thoroughly studied yet it plays a pivotal role in all elements of civilization. Ignorance infiltrates science and art as well as policy, business, and professional life. Not surprisingly, a new field of ignorance studies is emerging.

- In redefining disciplines and our knowledge organizational standard, a new and more thorough investigation of other crumbling systems can also commence. Capitalism is one of the largest global structures teetering on the brink of global economic catastrophe. Interdisciplinary and transdisciplinary approaches can help us look at old paradigms in a new light and usher in fresh avenues of thought as well as new paradigms.

- However, the concept of discipline has infected our language and the simple rewriting or reorganizing of disciplines may not be enough to navigate us through the rocky shores disciplines have placed upon us. In order to escape this paradigm entirely, the whole system of knowledge building needs to be reconstituted – beginning with a new language of reform in education and knowledge production.

Implications

- Muslim societies should look to interdisciplinary and transdisciplinary frameworks as great examples for the integration of thought and knowledge building. Most problems of Muslim societies are complex and interconnected and would benefit enormously from inter- and transdisciplinary modes of inquiry.

- The end of disciplines presents a rich opportunity for Muslim societies to establish standards for educational reform and the creation of the new institutions of higher learning. Muslim societies face the challenge of building disciplines that reflect their needs and aspirations, and the worldview of Islam, from ground up. However, caution should be exercised to assure that old-paradigm disciplines do not re-merge with a different (Islamised) name, without reinventing the wheel!

- In creating a new system of knowledge building, Muslims have an opportunity not just to change global perceptions of Islam and Muslims, but to contribute to the overall benefit of humanity. Muslims have a great deal to contribute to the emerging discourse of integration of knowledge.

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THE 3-D PRINTED BODY

The human body is an incredibly injury prone and fragile entity. Even considering current medical advancements, various injuries tend to inflict permanent deficit on the body. Despite its success, the contemporary transplant technology is fraught with the dangers of immunological rejection of donor tissue or a host of other complications; in the event of a successful organ transplant (from human, cadaverous, or animal donors), there is still a use by date that does not guarantee a functioning organ for the remaining lifetime of the patient.

3-D printing technology has the promise of revolutionising medicine. Though most products of 3-D printing are comprised of plastics, biological structures have been mimicked in plastic and could be viably used within the human body. 3-D printing has already been used for prosthetics but the challenge still exists on making organs that can carry out essential biological functions. The question remains as to how fast these technologies can advance to make plastic and biological tissues work together and how quickly a match organ can be produced for a patient in need. The technology is advancing rapidly, however, and it is not unthinkable that much of the body can be produced by simply hitting print and waiting for the design to be sculpted.

Elements to Consider

- Common materials that are used for 3-D printing involve a variety of plastics, polymers, epoxy resin, wax, glass, nylon, and a variety of metals. Thus far biological tissue has not been 3-D printed but advanced plastics can mimic skin and other tissues like cartilage and muscle.

- The greatest challenges for 3-D printing lie in reproducing the complexity and dynamic nature of the human circulatory system. The nature of vessel tissues through its interaction with outside molecules, blood, and self-repair makes it a difficult process that cannot be replicated with current 3-D printing materials. Also each person has a slightly different circulatory system based on personal history, environment, and genetic differences.

- 3-D printed organs are not presently able to conduct the intricate biochemical processes carried out by organs such as the kidneys, lungs, or liver. Partial transplants have been effective in improving the capacity of an organ while the functionality can still be carried out by the remaining segment of the organ.

- The heart, being one of the simplest and most medically well understood organs makes for a viable candidate for the first artificial heart transplant. The issue still remains in the ability for a plastic heart to mimic certain neurological features that allow the heart to beat unconsciously and be connected to the brain's stimuli. Also, again, the heart being the engine of the circulatory system, will have difficulty transferring between vessel tissue and

plastic tubing. Despite these seemingly impossible hurdles, 3-D printed hearts for transplants are not too far off from possibility.

- 3-D printing has allowed surgeons and medical practitioners to model and perform complicated procedures. When done in real life, what was once considered a dangerous and experimental treatment could become routine.
- 3-D printing could potentially be limitless once details are worked out using biological material. But a whole plethora of bioethical and moral questions are produced in this endeavour. Where is the line between liveability and leisure? At what point is a person more 3-D printed than a natural product? What effect will this have on society overall if anything can be 3-D printed?

Implications

- 3-D printed organs, at least at the onset, will still be the luxury of wealthy people and wealthy nations. Will the technology be made available to poorer Muslim states? Or will Muslim societies be further divided by those who have the means of obtaining 3-D printed organs and those who must suffer without?
- There is an opportunity for Muslim countries to embrace 3-D printed technology at an early stage and contribute to its further development. Appropriate science, technology and medical education can enable Muslim states to be in the forefront of 3-D innovations. This will create both a market for knowledge building as well as for a new economic commodity that could be specialized in Muslim countries.
- There will be enormous religious and societal implications that would require serious thought and reflection. Do 3-D printed organs or body parts violate the sanctity of the body or the gift of life? How would this change the bioethical discussions of who gets an organ first and who might be entitled or disqualified from obtaining such treatments? What are the consequences of keeping patients alive through 3-D interventions? Would people throw caution to the winds and engage in all sorts of unsavoury activities knowing that in the morning a few 3-D prints could make everything as good as new?

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APPS FOR CRIME

The picture of crime is changing. Traditionally armed, masked people would storm into a bank and ask the teller to empty the vault and if any security sensors were set off, someone was going to get it. The masked individuals would then run to a well-placed getaway vehicle and race to escape pursuing cops. The future is a teenage boy in his bedroom, tapping into the interconnected web co-opting passwords and identification numbers to drain accounts and falsify identities. All from a laptop, or increasing apps purchased from online black-market vendors.

Even AI technology can allow for audio and visual manipulation to blackmail or trick an individual into handing over a hefty ransom. As life moves increasingly into cyberspace, it only makes sense that crime heads that way as well. Thus, cyberpolice and cybervigilantes will soon follow. Cyberattacks are not only a matter of business and governments, but are moving into the microsphere as well and now all online persons stand to be victims of a new wave of crime.

Elements to Consider

- Recent history is not new to the concept of a cyberattack. Traditionally hackers, usually requiring extensive computer skills and maximum patience, would have to work their way through the security measures put up by governments or private online organizations, especially those working in ecommerce, to access important information. Once extracted, via a sophisticated malware or bug, clever online movements would be required to steal identities or drain bank accounts. Technological and creative advancements have allowed for this process to be done quicker with much less skill required. Indeed, AI is increasingly doing the work of cybercriminals for them.

- The black market has gone online with the proliferation of online bazaars that sell guns, drugs, and, now, stolen data. AlphaBay and Silk Road are examples of this growing network of shadowy online commerce. At these sites, individuals are able to pay for apps and software that make hacking and information stealing a relatively simple process.

- Methods of making online crime more user friendly include phishing scams that aim to trick individuals into opening attachments or links through private email that automatically establish doorways for hackers to sneak into private files. Other techniques include establishing hotspots in public areas where free Wi-Fi is provided so that hackers can easily tap into low security apps on smart phones and other devices to steal pieces of information that can quickly be linked to other private data. Still other scams include bribing low-level employees or individuals to plant random USB drives throughout a business in the hopes that someone will pick one up and put it into their computer allowing for a hacker to remotely enter that computer and the whole company's network.

- The commercial introduction of low cost camera equipment for CCTV security, or baby monitoring, or simply Wi-Fi enabled home appliances are easy access points that have no security structure and allow hackers a pass into a network and steal personal information.

- As new AI technology and apps are developed, they can be exploited for even more drastic instances of cybercrime. One example is the use of a fabricated audio and visual display of an individual's daughter or son. The culprits create a fake version of the daughter based on AI manipulations of photos, video, and sound files to say that they have kidnapped their daughter/son and would release her/him upon the paying of a ransom. AI has the potential to be used to make an imposter pose as someone you know or would trust with sensitive information. AI use of face recognition and cross referencing of online accounts and social media profiles could result in greater instances of ransomware, blackmail, and innocent people being connected to crime and scandal, and a multitude of other situations.

- The increased interconnectivity of life and crime has even lead police forces to begin training in hacking and anti-hacking capacities to prepare for this new wave of

crime. Cyberforensics is an up and coming field that allows policing bodies to trace and track cybercriminals, cybercrime syndicates, cybermobs and cybervigilantism.

Implications

- Cybersecurity issues are highly pressing for Muslim countries. As conflict is continually arising and seemingly never ending in much of the Muslim world, cyberattacks are likely to become major instruments for crippling society. The fragile infrastructure of Muslim states are particularly at risk of cyberattacks.

- The rapidly increasing wave of internet proliferation and usage in Muslim society opens up the population to the vulnerabilities of cybersecurity. As more and more devices are Wi-Fi enabled, more and more vulnerabilities are opened up in home and company networks. A coffee machine could be the avenue through which one's identity is stolen and bank account is emptied. One email could destroy an entire company or leave it at the mercy of a teenager in his bedroom.

- Far right groups could use apps and AI to specifically target Muslims by increased accumulation of data – staged for crimes they did not commit by manipulation of facial recognition sensors, words placed in their mouths by manipulation of audio files, and racially profiled for attacks.

- Data accumulation is not only a hot industry among the legitimate business world; it is also a growing lucrative commerce for online blackmail of businesses. Big data could be used to undermine Muslim businesses, as well as thwart Muslim societies attempting to establish their economies on the global market.

- In order to establish a necessary infrastructure for deterring and preventing cybercrime, Muslim societies will have to invest heavily in cyber security and protection. There is a need for developing networks of cybersecurity institutions throughout the Muslim world.

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ASTEROID MINING

Asteroid mining is the exploitation of raw materials from asteroids and other minor planets, including near-Earth objects. There are three options for mining:

- Bring raw asteroid material to Earth for extracting gold, iridium, silver, osmium, palladium, platinum, rhenium, rhodium, ruthenium and tungsten

- Process it on-site to bring back only processed materials, and perhaps produce propellant for the return trip. The minerals considered for this option are: iron, cobalt, manganese, molybdenum, nickel, aluminium, and titanium

- Transport the asteroid to a safe orbit around the Moon, Earth or to the International Space Station (ISS). This can hypothetically allow for most materials to be used and not wasted. In this case, the resources sought would be water and oxygen to sustain astronauts; as well as hydrogen, ammonia, and oxygen for use as rocket propellant.

Elements to Consider

- The 1967 Outer Space Treaty, ratified by 103 countries, prohibits anyone from 'appropriating' territory in space. However, it is not clear about extracting resources and taking them home. The fact that the US took material from the Moon

and claimed it as its property, without any other state questioning it, may be considered as a precedent. Actually, the US traded space material with the USSR, and the latter even sold some commercially.

- The United States Senate has passed the Space Act of 2015, which includes a range of legislative changes intended to boost the US space industry. The Act includes measures allowing US citizens to engage in the commercial exploration and exploitation of 'space resources', with examples including water and minerals. If a commercial exploration team discovers microbial life, they can't exploit it for profit. Notice the echo of colonial laws and Papal Bulls that allowed anything found in the 'New World' to be claimed as the property of the Empire.

- NASA has already proposed a potential future space mission known as the *Asteroid Redirect Mission*. It will be the first-ever robotic mission to visit a large near-Earth asteroid, collect a multi-ton boulder from its surface, and redirect it into a stable orbit around the moon. Once it is there, astronauts will explore it and return with samples in the 2020s.

- Just the asteroid *Ryugu*, composed of nickel, iron, cobalt, and water, is worth an estimated $95 billion. Asteroid *Davida* was valued by Planetary Resources at more than $100 trillion (more than five times the GDP of the US).

- Some question that these projects are really viable or, more to the point, if the expected profit can be actualised. Yet, there are other arguments to support this initiative. The main two are: the possibility of giving a boost to planetary sciences, including the discovery of exotic new cosmic materials; and the fact that it would reduce the cost of space missions to explore the Solar System and the distant Universe.

Implications

There are several questions to consider here:

- This could be the definitive incentive to revitalize space exploration. Something that could have a myriad of potential impacts. From a new generation of science and technology innovations to the possibility of starting extra-terrestrial settlements. Mapping will be greatly advanced and the commercialization of space travel will quickly lead to space tourism.

- A new host of commercial exploits will be opened up, for example with Elon Musk's Space X program. Need for a discussion and boundaries on the issue of space mining is imminent as states, corporations, and private investors will want to jump on the opportunities available.

- It may also be the way to stop depleting the Earth's resources and, possibly, allow for a new wave of abundant raw materials, including water.

- But this may be precisely its main risk, because it is also the way to avoid the need to rethink and reform most of our unsustainable lifestyle. It could be akin to saying: we may be ruining the Earth

but there is no need to worry because we will either fix it with what we find in space or we find another place to carry on.

- Along these lines, if there is no need to rethink our way of doing things, there is also no need to change most of our present inequalities, particularly if all these initiatives are business oriented. In such a case, the richest will profit the most, leading to further inequalities.

For Muslim countries asteroid mining has both positive and negative implications. Rich Muslim countries can play a role as sponsors and, therefore, get a shot at the first-round exploit of those resources. They would focus on the resources they need the most, such as water. Vast swathes of desert could become the new home of space mineral processing and waste; and provide employment opportunities for a growing population.

If asteroid mining becomes a reality, it will further increase the division between astronomically wealthy Western states and the Muslim countries. Even if a few rich countries gain considerable benefit, the bulk of the Muslim world could be left untouched by the wealth generated. An over-reliance on space resources could result in neglect of resources exported from Muslim countries, leading to a significant drop in demand.

There is also the issue of who owns the technology. Muslim countries do not have a background in space science, and have failed to develop world class indigenous science and technology institutions. If this does not change in the coming decades, Muslim countries would once again be dependent on foreign know-how.

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MAPPING THE COMPLEX BRAIN

The brain remains the most difficult and complex part of the human body. It is the centre of neurological processing, controlling unconscious functions, responses to stimuli, homeostatic normalization, conscious action and thought. It remains the least understood and greatest source of curiosity within the human body. Neurologists and computer

scientists have worked away at modelling and mapping the human brain so as to determine anatomical and physiological roles each fold and crevice plays. Though the original intent of such endeavours as the Human Brain Project were for medical research, it has opened windows into external brain monitoring and control as well as brain control beyond the human body. The potential futures of these advancements present an opportunity for improving neurological research and understanding, but there is also a shadow threat in the possibility of consciousness uploading and mind control.

Elements to Consider

- The brain is remarkably hard to study in vitro due to it being essentially entangled bundles of neurons, its constant need of precise conditions, and its existence within a thick and pressurized skull. The unique development of the human brain amongst other humans makes precise localization of functionality difficult. While there are numerous commonalities, damage through trauma and environmental factors along with the remarkable plasticity of the brain make a universal road map nearly impossible. Neural regeneration is still a mostly unknown process that cannot be effectively replicated.

- Most brain mapping that has been done is the result of tracking electronic signalling (via EEG) or tracking of blood flow changes in response to various stimuli. These scans have given neurologists a good indication of the effects of certain feelings, functions, and responses and where in the brain these effects are derived from.

- Computer modelling has allowed for a greater regional breakdown of the brain, allowing for increased ability to localize brain functions and responses. This allows for simulations that could lead to neurosurgical advancements in techniques and accuracy in correcting neurological malfunctions.

- Scientists have also studied what parts of the brain are stimulated during subject exposure to feelings, memories, or substances. What makes the human happy, sad, anxious, angry, feel pain, recall memories, or euphoric has been mapped and can be targeted through drug therapy or electromagnetic stimulation. New pharmaceuticals are being developed that can block or excite certain neurotransmitter releases to control mood and improve the efficiency of the human person.

- The electronic signals released by the brain have also been translated into a brain-computer interface that allows electronic brain signals to be translated into actions on a computer. This has launched a proliferation of mind controlled products into the market, where a headset allows one to move a floating ball through a maze or control a computer mouse. While the commercial production of these EEG driven headsets currently is quite weak, improvements are constantly being made to allow for simple mind operation of various devices and toys.

- This technology has also been flagged by various companies as a marketing resource. EEG scans can allow companies to determine what consumers want and what products result in a given feeling within the general population. Data produced by various EEG sensitive products is always reserved for the ownership of the company selling the product and EEG data stands to be a major commodity in the near future.

- The next horizon for posthumanist thinkers and researchers is the ability to upload a consciousness into a computer. This possibility has been fictionalized in the film *Transcendence* but is becoming more and more real as all work on human brain mapping is put together. This would allow for the possibility of humans to live outside of their bodies in a machine or computer in the result of catastrophic body damage or temporarily during an evasive surgical procedure. This could also allow for the cataloguing of thoughts or memories that poses a substantial possibility for commercial value in the future.

Implications

- Muslim states need to participate in the project of mapping the human brain with a view to building a foothold on technological education and research into this endeavour. The potential medical breakthroughs for mental and neurological diseases would be of particular benefit for Muslim societies.

- There is also the dark possibility for mind control in this technology. It could begin as simple marketing targets and commercial control, but accelerate rapidly to being used against Muslim people. Muslim extremists could also use mind computer interfaces to literally brainwash Muslim societies or reprogram them with extremist outlooks.

- Brain-computer interfacing could also be used in warfare: a number of killing devices could be activated by the simple use of one's mind. This combined with the ability to regulate aggression and memory suppression could turn human soldiers into remorseless killing machines.

- Mapping of the brain raises a multitude of questions for Muslim societies concerning theological and societal issues. Uploading of the mind can produce the illusion of immortality while also changing the definition of spiritual transcendence, raising a host of theological and moral conundrums. Similarly, the social implications of brain-computer interfacing and mind uploading need to be explored as the resultant social and cultural consequences could be devastating.

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SOCIAL DISRUPTION VIA VIRTUAL REALITY

Virtual reality (VR) can be described as an immersive multimedia or computer-simulated 3-D reality. VR replicates an environment that simulates a physical presence in places, which can be real or imaginary, allowing the user to interact in that world. VR can create artificially sensory experiences, which can include sight, touch, hearing, and smell.

The development of new headsets such as Oculus Rift, or the combination of headsets with smartphones is making this technology ready for mass consumption at affordable prices. This, in turn, will boost the development of VR software and take its applications to an unprecedented level.

Elements to Consider

- The first promise of VR is that it breaks the limits of physical space making it flexible and malleable. Therefore, there will be no more need to compete with another thousand persons to get the best view of the Mona Lisa, no need to rush to get the best place to watch Lady Gaga, no need to queue for two days to get a seat for the new Star Wars premiere.

- It may free the most visited places from a constant flow of swarming tourists.

- But it will also make virtual travel affordable to an unprecedented level. Even the most exclusive, extreme, far or dangerous place will be within the reach of anyone capable of buying an average smartphone.

- In a more personal context, it will allow users to create and experience their own dreams: flying to outer space, fighting orcs in Mordor, scoring a decisive goal in the World Cup final, travelling with Ibn Battuta or experiencing the hajj from their living room.

- It may redefine traditional ways of teaching, working, performing or even healing.
- In short, it will redefine the current notion of travel and entertainment and will thus have a major impact on the tourism industry. But also on media, infotainment and digital leisure. Forcing most human activities to incorporate this immersive capacity.
- The fact that some of the biggest companies – such as Facebook, Google and Sony – are investing in this technology guarantees that it has a wide dissemination and a constant flow of new applications.
- It has been suggested that VR can become *Panem et circenses* 2.0 (bread and circuses) to keep the disempowered masses happy and docile.

Implications

VR will have a whole range of effects from the short to the very long term that deserve some reflection.

Travel and tourism industry will be among the first to be affected with both positive and negative effects (many depending on the standpoint adopted). Among the positive:

- A reduction in the greenhouse gases emissions due to reduction in planes, ships, cars and train journeys.
- A diminished pressure on fragile destinations such as ancient sites or valuable ecosystems.
- A decrease in crowded surroundings at top touristic spots.
- But, at the same time, it may open a new form of tourism market to millions of new consumers.

Amongst negative impacts:

- It may damage businesses that rely on tourism such as hotels and airlines leaving their workers unemployed.
- It may also be a tough blow for the economy of many places that are very dependent on visitors and other fiscal benefits provided by tourism.

In the longer term VR will also affect many other fields and force the adaptation or reconversion of many activities. For example:

- Professors will be required to produce VR modules of the subjects they teach so as to allow their students immersion in them.
- Social interaction, be it for work or leisure, will be altered as it will no longer be necessary to perform them personally when you can send or use your avatar instead.
- The entertainment industry will be pressed to produce new modes of VR experiences and leisure activities.

But perhaps the deepest and more transcendental change is that VR will cause an irrevocable shift in our notion of experience. So far, we still distinguish between something that is physically real and something that is clearly virtual. In the past, books, paintings and music could

take us to other places and made us feel in a way that 'real' experience could not. Later, photos, cinema and TV made those manufactured feelings even more compelling, 3-D and surround sound techniques made the experience even more realistic. But now we are reaching a point where it may not be possible for our brain to distinguish what we have considered reality so far from our virtual take on it. And that may take us to some intriguing situations. For instance, will killing an avatar of someone you despise count as manslaughter? Would behaving inadequately in a virtual sacred place be classified as blasphemous? Will changes to our minds in VR change them in actual reality. Will our violent and sexual desires that are instantly fed in VR translate or be unleashed to the outside world? More to the point, what will be real? How will we define reality?

The proliferation of VR technology would have direct impact on Muslims that rely on tourism – Turkey, Morocco, Egypt, Malaysia, Indonesia – which could see a sharp decline in tourists with attendant economic consequences. Similarly, airlines such as Emirates, Qatar or Turkish could see a sharp drop in passengers if VR armchair tourism is well established.

Then, there is potential impact of Muslim rituals. In a VR Jumma, one could be part of the Friday congregation while praying at home. Indeed, the very experience of attending mosque or even daily prayer could be converted into a virtual practice. There are already apps to perform the hajj virtually and thousands of Muslims have downloaded them to perform the pilgrimage. So far, they are still clumsy and don't look that real, although some people claim that they have really attained a religious feeling. Yet, in the next few years, they will offer a much more compelling experience. Indeed, a VR hajj that takes the pilgrim right to the heart of various rituals, allows him or her to touch the Kabah and the Black Stone, sit at *Maqam al-Ibrahim*, and perform all the rituals exactly as desired, may actually offer a more enriching and spiritual – not to say totally safe – experience than the real hajj. What would that mean?

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THE BLACK JELLYFISH IN THE SEA OF CHAOS...

POST-CAPITALISM ALTERNATIVE ECONOMIC PARADIGMS

Capitalism is a mode of production that functions solely on the accumulation of more and more – even to the point of destroying all other institutions and society itself. It requires no sustenance except that which produces the addition at the end of the equation. This has always been the case in capitalist societies; recently, it was brought into the light of public view by the 2008 Financial Crisis. The rapid acceleration of capitalism's destructive power shifted into top gear by the adoption of extreme neoliberal economic policies in Western countries. Capitalism thrives on the booms and busts in the market. The economic industrial cultural complex that has resulted does not even understand its own intricacies and the language it speaks. Alternatives have been proposed, but the changes required in the current system cause their rapid squelching and destruction. Critics of capitalism believe that a paradigmatic change is needed towards sustainability; the transition will be one of the most difficult processes for humanity to navigate through and will necessitate economic, educational, social, and cultural reforms. We will first have to unlearn in the effort to learn a new way of life.

Elements to Consider

- Neoliberal thought at its heart states that all humans act for their own self-interest. If the economy allows humans to be selfish, taken together this provides for the interest of society. Therefore, free markets and laissez-faire state participation allow

for the flourishing of a given society. There is major concern in the first premise that humans always act selfishly, but aside from that there are no safety nets for the disadvantaged. There is no protection that can preserve a middle class and wealth – gaps are allowed to draw and quarter society. No incentives are available for anything other than the increasing of one's profits which always come at the expense of others in this uber-competitive culture.

- Capitalism has a flexible and virus like ability to adapt to changes in society that allows it to thrive in any condition. At the end of the day, capitalism succeeds, even at the cost of everything around it, as long as more comes out than is put in. In its most pernicious form, such as hedge funds, capitalism behaves – much like a vampire – as a cold dead insatiable desire to consume living things and accumulate profit and capital.

- The power inherent in a capitalist system is its ability to transform an entire culture. The nature of competition, winners, losers, and the drive for more and more is reflected in traditions, religious practice, political structures, social contracts, and the language of the West itself. Yet, no one truly understands it, least of all economists, the people we proclaim as the specialists on capitalism and neoliberalism. Indeed, economics doesn't define itself either as a science or a philosophy – or anything else. The study of economics is always conducted in a vacuum, and all that is taught to economists are the ways in which they can manipulate the system to get the greatest profits. This perpetuates a system in which its highest-ranking members don't truly know what words like value, wealth, or money actually mean. In this systemic constructed ignorance those at the top can dictate the reality of the world as they see fit.

- Contemporary revolutions in technology provide an interesting fork in the road towards the futures of our global economic system. Down one path capitalism can shine at its brightest in new industries of inexhaustible resources such as Big Data and information and drive all business towards the efficiency and convenience of online ecommerce and etrading. This will result in gigantic shifts away from physical transactions and outlets and towards automation of the world with massive unemployment. Wealth gaps would build on the technology gaps to create even more disparity in society. Down the other path is the emergence of ethical and ecological business and commerce, reforms in education and increase in social consciousness. The actions taken at this moment can alter the path of navigation we as a society will take.

- Attempts to fix or reign in capitalism have been largely fruitless and will continue to be so if the paradigm isn't shifted. Strong state involvement in markets has been a major attempt to break up monopolies and provide welfare for the majority. However, capitalism itself has taken on the role of the state and turned it into a player in its own game. China has been the biggest example of this as its tight control of its industries has essentially turned the Chinese Communist Party (CCP) into another corporation competing on the global market. Otherwise, the

corporate interests of the elite have rapidly shut down any attempts to block the free market and deregulating trends in the West. Politics has been co-opted by capitalism; and, ironically, democracy itself has fallen victim to the power of corporations and the rich one per cent. Elections can be bought; legislation can be thwarted or changed by powerful lobby groups, candidates can be compromised with campaign donations. Democracy itself has become a big business.

- Most of the alternatives to capitalism look to return to the way things were before capitalism or look to what could happen after the (presumed) inevitable demise of capitalism. Some thinkers argue for a return to the simplicity of hunter-gatherer societies as the proper starting block for moving away from the creative destruction of capitalism. Others look ahead to the future. The unsustainability and acceleration of booms and busts in the market will result in capitalist societies tearing themselves apart in an apocalyptic result. This would bring about post-capitalism, where neither the state nor the one per cent can bail each other out. As a result, society will move to a more community oriented mode of production and sharing economies. Virtually all thinkers agree that sustainability and environmental protection are key elements that need to be incorporated into emerging paradigms. Likewise, social consciousness will be beyond the confines of ignorance and will need to be addressed.

Implications

- Muslim societies have suffered enormously under the hegemonic, global capitalist order. The politics and culture of many Muslim countries are driven by the exploitation of labour and scarce resources. The inherent injustices of neoliberal capitalism are also reflected in Muslim societies: accumulation of wealth in fewer and fewer hands, and poverty on a grand scale, is as evident in Muslim states as it is on an international level. The impact of the fall of capitalism will ripple throughout the planet, but Muslim societies are likely to be in the front lines of the chaos that will ensue.

- The problems associated with the current crisis in capitalism have a direct bearing on the future survival of Muslim societies. Issues of sustainability, climate change and resource scarcity, particularly that of water and energy, are of immediate concern to Muslim societies. The economic policies of Muslim states must focus on these issues; Muslim unity and progress on these issues is essential for shaping viable futures. Contrary to the beliefs of the devoutly neoliberal, action does not occur in a vacuum. Small changes can have global and lasting effects.

- Muslim societies have an historic opportunity to lay the foundation of an alternative system: a reformed Islamic economics, focussed on ethics and ecology, may very well contain the essence of a post-capitalist model.

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GENETIC MODIFICATIONS

Genome editing is a method for scientists to change the DNA of plants, animals, and bacteria. While these techniques have existed since 1990, recent advances have made it much easier to edit DNA. The most widely used techniques, CRISPR (clustered regularly interspaced short palindromic repeats), invented in 2009, is regarded as simpler, faster, accurate and cheaper than older genome editing methods. Crispr-Cas9 uses the protein cas9 (utilized as an enzyme) as a programmable tool to site-specifically modify genomes of cells and organisms, from bacteria and human cells to whole animals.

In February 2016, the UK Human Fertilisation and Embryology Authority (HFEA) granted permission to edit the genomes of human embryos for research. This represents the world's first endorsement of such research by a national regulatory authority.

Elements to Consider

- In 2015, scientists successfully applied gene editing treatment to a one-year old British girl suffering from leukaemia. They did not use CRISPR but another technology called TALENs.

- So far, there is only one published study that describes genome editing of human germ cells. A group at a university in Guangzhou, China, used CRISPR to edit the genome of human embryos.
- The applicable legislation varies widely from one country to another, creating a huge window of opportunities for ambitious researchers.
- The CRISPR–Cas9 technology has made modifying DNA cheap and easy. It doesn't require top experts or equipment to apply it.
- There are alternative enzymes to Cas9. Some, like a protein called Cpf1, may make it even easier to edit genomes. Zinc finger nucleases are a developing technology where segments of DNA can be targeted and cut out relatively easily.
- These techniques are used to 'fix' damaged DNA so as to prevent and cure genetic diseases and are passed down to offspring through the patient's sex cells.
- High profile investors are bankrolling genome-editing projects, including Bill & Melinda Gates Foundation, Google Ventures and DuPont.

Implications

CRISPR is one of those techniques that signal a turning point in human evolution, literally, as it has the potential to improve and/or save the life of millions as well as transform humanity as a whole. Up to now, it has been used to: reverse mutations that cause blindness; stop cancer cells from multiplying; make cells impervious to the virus that causes AIDS; render wheat invulnerable to killer fungi like powdery mildew, hinting at engineered staple crops that can feed a population of 9 billion on an ever-warmer planet; and alter the DNA of yeast so that it consumes plant matter and excretes ethanol, promising an end to reliance on petrochemicals.

The presence of high profile investors indicates that this technique has an enormous business potential. At the moment MIT, the University of California Berkeley, and the German Max Planck Institute are fighting over the Cas9 patent and have founded companies to exploit the applications of this protein.

There is, of course, a darker side to gene editing. Consider:

- Cattle, pets, and endangered species can be produced in mass quantities.
- Increase in fertility abilities can be made available. One or two infertile parents can have their DNA transposed into donors.
- It makes it easier to genetically design babies to the parent's demand.
- Super humans could be produced with all the benefits of perfect genetic manipulation for health, youthfulness, strength, and aesthetical beauty.
- It can be used to create bio-weapons, including bio-weapons that target particular genetic features.
- It enhances the capacity to design species that could invade or colonise specific ecosystems.

It is, therefore, paramount to define protocols to limit the authorised use of this technique. However, the lack of shared standards among diverse countries makes it possible to engage openly in the application of this technology in many places, most notably in China.

Gene editing has many benefits as well as dangers for Muslim countries. It is a relatively easy and cheap technique that can be embraced by research centres and educational institutions in Muslim societies. Indeed, new gene editing centres of excellence can be established in Muslim states. It could help to obtain better harvests in places where, temperature rise and water stress, would make ordinary crops unviable. Muslim countries could develop markets for genetically cloned plants and animals as well as benefit from research and developments in this area to keep up with the global knowledge base. Of course, Muslim societies could also use genetic engineering for enhancing physical characteristics, giving affordable outing to all sorts of stereotypes or prejudices, making it easier, for instance, to have paler children (as it is happening in some places). It may be used to engage in genetic warfare against some Muslim groups, such as Arabs or it can be applied to ruin specific ecosystems in Muslim states.

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SMART LIFE

Neoliberal ideals, technological advancement, and the pursuit of the good life have been wonderfully packaged into an underlying system that has transformed both the working and private life into a device and app run world. State what you desire and techno-robotic assistants in the form of Alexa and Siri will deliver. All needs are a button press or a voice command away from processing and express shipment. Work and social life are perceptually walled off from each other but exist as one in this augmented reality of cyber and physical self. Our exercise, consumption, likes, curiosities, and all elements of our habits are tracked and compiled. The Internet of Home controls our whole environment from room temperature to the content of the fridge to when and how we sleep. Is this liberation? Or is a system of self-sustained, constant loop of updates and pattern recognitions that controls all aspects of our life a new form of self-perpetuated repression?

Elements to Consider

- What was originally developed as a new entertainment system complete with the infinite selection of the internet has become a new member of the household, even a new member of the family. Every major tech company has one of these devices, a few of them include Amazon's Echo or Google's Home, and they take on human identities such as Alexa, Siri, or Cortana, to make that perfect friend/servant appeal. They not only allow for greater access to the internet or your apps, but track and adapt your choices so as to be reliable decision makers and planners

– perfect at performing such tasks as figuring out where to eat and how to either get a table reserved or have it processed for take away. Soon all thinking and planning will be performed by these devices.

- While ecommerce websites and social media have been using data tracking for the purposes of suggesting and presenting new products via targeted marketing for some time, there are inherent dangers in greater aggregation of data. Everything can be tracked and monitored.

- The data gathered could be used to manipulate political systems, compromise democratic institutions, spy on individuals as well as manipulate and control citizens. In the hands of hackers and cybercriminals, it could be used for blackmail, to steal identities, and empty bank accounts. To some extent, this is already happening.

- Airbnb, Uber, Lyft, and other such platforms have revolutionized the way we travel, be that a quick trip to the store or a weekend away almost anywhere in the world. But they have also caused havoc in the conventional 'nonsmart world' – from bankrupting age-old taxi firms to disrupting the social structures of cities, compromising mass transit systems and disrupting housing markets.

- The proliferation of smart life could render irrelevant not only old systems but humans themselves. It could also divide the global population between those capable of keeping up with the smart life and those who cannot afford the luxury of the smart life. A new underclass could emerge; and an invincible wealth gap could make the dream of the smart life a dystopian nightmare.

Implications

- The sedentary life style promoted by smart life introduces a strong element of banality into Muslim societies. It would allow for all Muslim families to have their days and essentially their lives planned out for them. Eat, Work, Buy, Sleep, repeat. In this deep extreme of consumerism and efficiency, the meaning behind our daily rituals falls out. Halal food and goods are purchased by the click of a button, prayer is tracked by an app, and the hajj is sponsored by Airbnb. But would the iQur'an be able to give Muslims the time to contemplate? Will religious or spiritual transcendence be something that Alexa or Siri can grant? There is a danger in blind acceptance of radical extremes as well as in the docile apathy. Can Muslim societies progress in a world where humans simply become shells of data?

- The wide usage of cameras, image and voice recognition technology that is foundational to Smart homes and workplaces, could potentially be used to target Muslims. It would enhance racial profiling, identifying 'potential' terrorists, or for spying on Muslim communities. Access to databases of Muslim communities could be used for manipulation and control. Autocrats and dictators could use the data to cement their authoritarian rule.

- An opportunity does exist if Muslim societies take a new approach to information and communication technologies. Educational and economic reform focussed on generating innovation with a Muslim twist that works to prevent cybersegregation and simple dystopian consumer extremes can make smart life genuinely ethically smarter in the future. In spite of all the potential nightmares of the smart life, there are also many benefits to health and wellbeing as well as communication in Muslim societies. It is the removal of ignorance on such matters and the recognition of the potential that can allow Muslim societies to thrive in the world. Muslim ideas on innovation, entertainment, fashion, cuisine and more can be made readily available to the rest of the world with a high potential for integration and cooperation.

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RULE BY ALGORITHMS

The end of the noughties saw the rise of the most unlikely of heroes, the mathematician. As science appeared to be reaching the limits of its scope and the planet becomes more and more interconnected and complex, maths was just abstract yet flexible enough to

revolutionise the world. First maths moved to finance, created all variety of derivatives with no bearing to reality, and made the rich richer, at the cost of a global economic meltdown. Now the very algorithms that have granted such wealth are being seen as the gateways to a new era for innovative technologies. Algorithms are the skeletal element of social media platforms and smart technologies. Their ability to take in swathes of data and put out simple answers has changed our very way of life. Ironically these matured just as the world went post truth, so now nothing can be trusted, yet algorithms continue to influence our social and commercial lives. A thin line exists between our input controlling the algorithm and the algorithm's output controlling us. The social blinders that these algorithms create mould the way we think and the actions we take.

Elements to Consider

- Algorithms are mathematical functions that are fed data in order to produce outcomes, the modelling of algorithms allows for outcomes to be traced and provide a predictive capability. The problem with algorithms is that they are bestowed with the character of mathematical objectivity, but they are socially constructed and have been exposed as bad statistics. There is a belief that a computer's processing of data is devoid of the pitfall of human bias. Yet, algorithms are inescapably conceived in human bias. Beyond that, the human error and bias that builds the data being calculated is difficult to conceive in a vacuum.

- The algorithms that control various aspect of society tend to act as social barriers. They are used to guide the content that appears on the feeds of various social media platforms. The analysis shows that people prefer to be inundated with other friends who post and share bits that they themselves agree with or show interest in; similar to how search engines and ecommerce sites recommend and make suggestions based on your previous searches and choices. Socially this creates bubbles where you live and interact only with those of your cyber constituency, only hear about political issues you care about, candidates who support your views, and items that you would potentially want to buy. This can be detrimental to deliberative forms of social and political discourse and change; and can lead to further alienation and xenophobic expression.

- Largely due to unawareness of the processes at work behind the internet and social media, the algorithmic outputs slipped into our everyday lives are taken for granted without further investigation. Meanwhile, the post-truth tendency leads to large distrust of experts, politicians, and statistics – in direct contradiction to what is posted and reposted throughout social media. This only propagates the post-truth condition and leads to dangerous conflict when bubbles are forced to interact outside of their cyber safety blankets. This is a breeding ground for harmful ignorance and fake news creating more unknowns and contributing to the further complexity of the entangled mess that is society.

- The effectiveness and attraction to algorithmic models has created vast quantities of big data that is, for the most part, retained by the companies that use the algorithms in the first place. This is leading to the emergence of a new industry that is almost entirely shadowy in both its legitimate and illegal business practices, where data is only used for manipulative purposes.

Implications

- Algorithms often hide behind a veil of objectivity but many are truly flawed and manipulative. Even in its more good intentioned uses, the technology manipulates and unconsciously silos off society into monochromatic subgroups.

- Muslim societies face a tremendous challenge: algorithms can be used to support fake news, promote racism and Islamophobia and all-round ignorance. Algorithms have been used to discriminate against Palestinians, racially profile 'Arabs' in airports, and to deny access to parts of the internet to certain Muslim countries.

- Muslims too could use algorithms to promote extremism and violence. The so-called Muslim Cyber Army (MCA) of Indonesia has used algorithms for bounty hunting, inciting jihad, and to spread hatred of religious minorities, Chinese and alleged communists.

- The worst part is that these models have little room for corrective action. Thus the ability to resist such a system or correct the errors that are inherent to even the maths itself is limited. In the post-truth world, it will be hard to tell if the actions and choices we make are a product of our thought or surreptitiously dictated by algorithms.

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CITY AND CORPORATE STATES

Democratic governments have become too big and too complex to function appropriately. Often failures to establish a government following an election, or the suspension of coalitions, has resulted in states running without a formal federal government. In many established democracies, exceptionally large cities, such as London and Istanbul, seem to function as semi-independent states. A majority of European states can be summed up, in terms of population and economic activity, as swathes of land revolving around large cities. Perhaps the next step is a major realignment of power with large cities functioning separately from the state leading to a redrawing of the geopolitical map.

Meanwhile, giant corporations are becoming more powerful than national governments. Most powerful among them are the tech giants. They are sustainable and provide not merely a model for running a successful business, but treat their businesses as societies. Not only do cities compete to house the next corporate site, essentially surrendering their sovereignty, but the industrial campuses themselves resemble great global metropolises. Their annual financial reports look more like expressions of GDP.

Should we prepare for the emergence of a plethora of city states acting independently within national boundaries? And corporate states outperforming unstable conventional polities?

Elements to Consider

- A city state model has been effectively demonstrated in Singapore and Hong Kong, both with flourishing economies. Singapore is run under a very strict law based on a stringent corporate model. This model could be adjusted for the Silicon Valley style of culture that has been developed in the current generation of tech companies.
- This model could be exported to democratic societies in the West as well as Muslim countries.
- The major cities of the world are increasingly becoming the drivers of innovation and national interest through economic production and international cooperation. International sporting competitions and business events are progressively organised on a municipal level. The idea of a city's government running a given area and the nearby suburbs could provide a boost to participatory democracy as well as make democracy more direct and effective. The elimination of red tape could move things at a faster pace in this ever more accelerating world.
- The elimination of a federal government would decrease the likelihood of oppressive regimes and government gridlock that threatens to seize day to day functionality. There would also be a difficulty in regulating the overall economy, providing for the welfare of a given people, and in controlling power as city monopolies could arise and be just as detrimental as the former federal governments that city states sought to phase out.
- In America, the influence of tech companies is rising to monopolistic proportions. Their access to powerful data, essential functions in society, and net worth allows them to provide for the people what a state could/should provide but without levying taxes. The only thing they don't have is an army, but the innovation is automatic and robotic warfare might be the next best thing. Their ability to instantly deploy their talents on tragedy-stricken countries as was displayed by Google and Tesla/Space X in Puerto Rico following Hurricane Maria could set the standard for future foreign aid deployment. With their eyes on space and the future of infrastructure, they have only to take the reins of power from federal governments to become their own societies.
- Large corporations, such as the major tech giants, could secede from the state and act as their own recognised governments. Silicon Valley and similar communities could take on the city-state model as their own becoming global players and even provide refuge for other global citizens.

Implications

- Megacities in Muslim societies already tend to act much like city states in all but name. The concentration of population, taking in mind the current trends toward increased urbanisation, and economic activity make them well suited to be the new centres of power in a city-state driven world. Istanbul, Cairo, Jakarta function as city states. The Gulf Emirates – Dubai, Abu Dhabi, Kuwait – are essentially city states.

- A city state model could be a desirable solution to the problems of authoritarian and extremist regimes. They could tear down the manufactured borders of the Middle East and Asia put up in the twentieth century by the West that have caused so much strife and conflict. There would still be issues of which cities controlled what territories and the potential urbanisation of Muslim societies could be detrimental to progress due to heightened competition. There is a chance that communities not allied to a city would struggle on the fringes of society or bind together in new unthought tribes or communes.

- The anticipated growth in Muslim populations throughout Europe could be a major driver of policy. In the futures of city-state organizations, young populations will be sources of power through revenue (through taxes) and innovation and development.

- Islamophobia could lead European cities to return to the medieval model of city walls that keep certain populations out or, in turn, keep certain populations in. Without large sweeping national or continental policy, the future landscape could be quite dystopian with a return to massive nomadic populations and migrating tradespeople.

- Muslim countries of the Middle East with their willingness to import culture along with its potential for vast solar farms could make their territories attractive to future Corporate states.

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NEW SUPERBUGS

Antimicrobial resistance is the ability of a microorganism to survive the antimicrobial properties of drugs. It refers specifically to an antibiotics ineffectiveness against common bacteria that cause infections. As a broader term, this encompassing resistance to drugs that treat infections, such as parasites (e.g. Malaria), viruses (e.g. HIV) and fungi (e.g. Candida). Resistant microorganisms are able to withstand attack by antibiotics so that standard treatments become ineffective and infections persist. The development of antimicrobial resistance is a natural phenomenon. However, certain human actions accelerate its emergence and spread:

- The inappropriate use of antimicrobial drugs, including in animal husbandry, favours the emergence and selection of resistant strains in offspring.

- Poor infection prevention and control practices contribute to further emergence and spread of resistance.

Evolution complexifies this phenomenon when microorganisms replicate themselves erroneously or when resistant traits are exchanged between them. The use and misuse of antimicrobial drugs accelerates the emergence of drug-resistant strains as microbes evolve to survive both natural and manufactured antibiotics. The excessive over prescription of antibiotic drugs for all illnesses is a major driver of this response.

Elements to Consider

- Antimicrobial resistance threatens the effective prevention and treatment of an ever-increasing range of infections caused by bacteria, parasites, viruses and fungi. It is present in all parts of the world. New resistance mechanisms emerge and spread globally, constantly, and simultaneously.

- In 2012, WHO reported a gradual increase in resistance to HIV drugs, albeit not reaching critical levels. Since then, further increases in resistance to first-line treatment drugs were reported, which might require using more expensive drugs in the near future.

- In 2013, there were about 480,000 new cases of multidrug-resistant tuberculosis (MDR-TB). Extensively drug-resistant tuberculosis (XDR-TB) has been identified in 100 countries. MDR-TB requires treatment courses that are much longer and less effective than those for non-resistant TB.

- In parts of the Greater Mekong subregion, resistance to the best available treatment for falciparum malaria, artemisinin-based combination therapies (ACTs), has been detected. Spread or emergence of multidrug resistance, including resistance to ACTs, in other regions could jeopardize important recent gains in control of the disease, even at the global level.

- There are high proportions of antibiotic resistance in bacteria that cause common infections (e.g. urinary tract infections,

pneumonia, bloodstream infections) in all regions of the world. Highly resistant bacteria, such as methicillin-resistant Staphylococcus aureus (MRSA) or multi-drug-resistant Gram-negative bacteria, are causing a high percentage of hospital-acquired infections.

- Treatment failures due to resistance to treatments of last resort for gonorrhoea (third-generation cephalosporins) have been reported from ten countries. Gonorrhoea may soon become untreatable as no vaccines or new drugs are in development.

- Patients with infections caused by drug-resistant bacteria are generally at increased risk of worse clinical outcomes and death, and consume more health services.

- A particularly concerning issue is the rate of resistance to last-line antibiotics (the ones given when all others have failed), especially in developing countries.

- South Asia is considered a hotbed for antibiotic resistance; it includes high background rates of infectious disease plus a large pharmaceutical industry plus an increasingly affluent population that can afford antibiotics. All these things together make the Subcontinent a perfect place to develop highly pathogenic strains.

- According to the Center for Disease Dynamics, Economics & Policy (CDDEP) in Washington, DC, investing in new antibiotics is not the best solution as it may only continue the current cycle of bacteria developing resistance to new drugs. The Centre believes that the long-term solution comes from all health actors (hospitals, public health officials, and doctors) saving the effective antibiotics for when they're really needed. That also means that vaccines and clean water must be the first line of defence instead of giving antibiotics indiscriminately and substantially reduce the antibiotic use in animals.

- Globalisation has increased the risk of spreading diseases. This is not only because of the growing number of people travelling all over the world, but also the arrival of new species to new places provoked by global trade. Aedes Mosquitoes are a perfect example of this. Originally a genus isolated to tropical regions, they are now found all over the world except in Antarctica. Now Tiger mosquito or Yellow fever mosquito have become global, spreading diseases like Dengue, Yellow Fever and the Zika virus.

Implications

The new superbugs may be the greatest health crisis of the twenty-first century. Several factors make the effects worse:

- The reliance on present medicaments to solve all illnesses. Prescription of broad-sweeping drugs is the cheap and time saving solution that undermines the value of a more preventative approach to medicine.

- Accompanying this rise of pharmaceutical based medical practice is the growing rejection of vaccination. Fearful narratives and rejection of established scientific research has led to an increase in people not getting and/or refusing their children to be vaccinated. This is opening up opportunities for the re-emergence of diseases that have been controlled for decades, such as diphtheria. Pakistan and Nigeria are the only countries in the world where polio is still endemic.

- The potential rise of superbugs needs to be considered within systems that determine methods, sites for construction and mechanisms for trade and commercial shipping. Exports of goods and the disruption of ecosystems make serious contributions to superbug development.

- The global use of antibiotics in cattle and poultry is also a major contributor to the rise of antibiotic resistance strains. Corporate farming is emerging as the largest source of antibiotic-resistance bacteria.

- Nanotechnology has shown promising results in killing of pathogens. The use of light to destabilize and destroy cells harnessed within nanobots can be an effective medicine against superbugs.

- Governments have to start thinking in an anticipatory manner about superbugs. Waiting for the next outbreak to burst, and then rushing to spend millions on drugs and vaccines is highly ineffective and may not actually work as in the case of Avian influenza.

There are several reasons why Muslim countries should be especially attentive about this issue:

- Many Muslim countries are in situations of special risk. The use of antibiotics is high and the standards of sanitation and health care are low. In areas of armed conflicts, not only is health attention severely compromised, but the chances of outbreaks increase manifold.

- In the poorer Muslim countries, the health infrastructures are more vulnerable to the eruption of outbreaks while the capacity to fight and contain a contagion is low. Man-made borders can only contain these diseases up to a point; therefore, superbugs are regional and global issues that cannot be properly handled on unilateral bases.

- The situation in South Asia should concern all Muslim states. South and South-East Asia are becoming a hotspot for infections and antibiotic resistance as many outbreaks have started in this part of the world.

- The pilgrimage to Makkah, the hajj, presents an annual risk of the spread of antibiotic resistance diseases. Health policies focussed on potential risks and containment of superbugs need to be developed both at national and international level.

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QUANTUM COMPUTING AND MEGA DATA

Quantum theory opens up our physical world to a new dimension of understanding. Here particles can exist in two places at once, the impossible is normal. Unlike conventional computers which work in the realm of yes and no, quantum processor work in the strange world of yes and no. And we are getting closer and closer to programmable quantum processors made with silicon.

Quantum computing will allow for the greater breaking down of information and data so as to process it at multiple times the current rate. Algorithms will run faster, processing will be near instantaneous, and greater vats of data can be stored and analysed. This gives rise to mega data, the computerisation of all life, and thus some measure of control over uncertainty and complexity.

Elements to Consider

- Quantum computing allows for the old language of computer coding (binary logic), which was based on 0 and 1 states, to gain a new state, that of a superposition, combined possibility, of 0 and 1. Therefore, quantum computer code is based on 0, 1, and 0/1 states.
- Greater breakdown of stimuli allows for a more easily read process which allows for greater speeds of computing. Algorithms that currently take computers months or years to crank through, can be processed in a matter of hours. This allows for an 'infinite' possibility of futures. The ability

to change language can recreate the world. In biology, the language of the amino acids A,T,C,G can be advanced into A,T,C,G, and A/T, A/C, A/G and so on. The cyber world grows by many times and so does the human potential to exist within it.

- Quantum computers and mega data would herald an unparalleled revolution in communications and computing power. This could lead to greater abilities at encryption and cyber security. Automation will be more precise and faster. Trade, commerce, and scientific advancements will operate at lightening paces. Life as it is known could move faster than the physical world, be more precise, and have a higher level of privacy and protection.

Implications

- The speed at which quantum computing will move will leave many states – including Muslim societies – behind. However, all societies stand to be cast into irrelevance by the possibilities revealed in quantum technologies. The quantum computer has an ability to falsely simplify life. It will appear that computing has become simpler. In fact it will be another step towards further complexity that quantum technologies demand, but at a faster pace that will create this perceptual contradiction. The rate of chaotic behaviour and production of ignorance will be so great it will appear that uncertainty has been conquered. But uncertainty cannot be conquered. The very concept of what is human stands to be destroyed and deemed irrelevant in the quantum future.

- What makes quantum computing so powerful is the concept of superposition, where something can exist in multiple states at once. The concept is best explained by the famous Schrodinger's Cat which can be both dead and alive at once. Superposition as reality will allow everything to exist as Schrodinger's feline friend. All thought will be moderate and extreme, right and wrong, secure and unsecure, stable and destructive and so on. Divisions within society, especially those of sectarianism and wealth disparity, will be exponentially increased.

- Muslim societies need both a place at the table and a cautious lens towards the development of quantum technologies. This means a greater cultural appreciation for science and technology in general and quantum physics in particular. There is a simultaneous need to embrace science and technology yet keep a critical distance from fashionable fads as well as dogmatic acceptance of all things that claim to be scientific.

- The clock's ticking down to the precipice of quantum tomorrows mark both an end and a beginning. It could equally be a path to prosperity or destruction. Little will make sense. The unprepared minds will not be able to even gain a toehold as there will be both: a rapid and constant descent and an equally rapid and persistent accent into this greater unknown.

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THE RETURN OF BALKAN GHOSTS

Historically the Balkans have been the meeting place between the East and the West. Culture, language, ethnicity and religion have all converged on this meeting of mountains and sea. It was where the first bullet was fired of World War I and it was where the Cold War met its grizzly end. What remains today is a grid of adolescent republics navigating their way through ethnic, religious, and political divides while facing the issues of globalisation and economics. At one end of this region is a transitioning Europe burdened with immigration and the stability of the European Union. At the other end, religious and political war that deepens global uncertainty. In between, Bosnia-Herzegovina: an impossible state of three different entities and simultaneous governments. Historic tensions of soviet memories, the failures of national socialism, the spectre of fascism, extremism and the pressures of modernization and economy flame the pre-existing Balkan ghosts of political uncertainty and xenophobia. Will these fledgling republics fall into the entangled web of Europe or tilt towards the chaotic storm in the Middle East? Will a new union be necessary to insure the stability and progress of these republics? How will the ghosts of the past and the complexities of the future alter the states of Serbia, Slovenia, Croatia, Bosnia-Herzegovina, Macedonia, Montenegro and Kosovo in postnormal times?

Elements to Consider

- The soviet republic of Yugoslavia survived the fall of the Soviet Union for a short period until economic and political failures resulted in the boiling over of ethnic and religious tensions within the populations. A Yugoslav war broke out in the early 1990s resulting in the atrocities of ethnic cleansing and massacres, leading to the genocide of Srebrenica. The result of the war was the creation of Serbia, Slovenia, Croatia, Bosnia-Herzegovina, Macedonia, and Montenegro. The former Yugoslavian ruler, Slobodan Milosevic, and some of his associates, ended up in the International Court of Justice (ICJ). But the tensions that caused the war were largely left unresolved.

- Since the end of the war in Yugoslavia, the further fragmentation of these republics is still occurring and under debate. Kosovo remains one of the highest contested of the newly independent states after its declaration of independence from Serbia. Kosovo is only currently recognized by a little more than half of the United Nations community. There is also the possibility of Repulika Srpska breaking away from Bosnia-Herzegovina.

- The European Union has been quick to accept some of these new republics but its slower admittance of the less ethnically European states along with Turkey has led to a rift in the region and charges of Islamophobia. That the EU can be intrinsically racist should not be overlooked.

- Continued ethnic and religious tensions in Bosnia-Herzegovina and Serbia's autonomous regions (Kosovo and Vojvodina) present a challenge to regional tolerance of the other and threaten spill over into the other former Yugoslav states.

- The revival of nationalism in Europe, including in the Balkan states, echoes the extremist sensationalism that led to the original Yugoslav wars. Increased presence of xenophobic and fascist elements within democratic bodies throughout Europe is a threat to the progression and rise of the Balkan states.

- Given the rapid re-emergence of nationalism and fascism, a future war between various Balkan states cannot be ruled out.

Implications

- The instability and tensions of the Balkan republics is a potential hotbed for the development of fascist groups and government infiltration as well as the rise of extremist Muslim elements and a battleground for organizations such as the Islamic State.

- The strong influence of Russia on the former Yugoslavian state cannot be overlooked. There is a possibility that Russia would come to the aid of nationalist forces in the region to the detriment of Muslim communities. The lessons of Crimea should not be disregarded.

- The complex and interconnected problems of the Balkan republics require long-term solutions. Transcending differences and overcoming the ghosts of the past would require serious attempts at community building. The region lacks an integrated vision that could guide it to a stable and peaceful futures.

- The Islamic community has an opportunity to take a lead both in shaping a vision and a viable future for the Balkan region. A vibrant and dynamic discourse of Balkan futures involving all sides and communities can be a major milestone against Islamophobia and national fascism in the region.

- The ideological battle for the Balkan future is an opportunity for Muslim societies to take on the ghosts of the past and progress a new polylogue of understanding and knowledge building between the West and the rest.

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DEGENERATION OF POST-WAR MUSLIM SOCIETIES

From the global war on terror, to civil conflicts, proxy campaigns, extremist violence, and the oppression of authoritarian regimes, Muslim societies are gripped in crippling feuds that will leave a large swathe of the Muslim world in a ruined state. So: where do we go from here? What kind of states will emerge in Afghanistan, Iraq and Syria in the coming decades? What would happen to Yemen after years of unprecedented violence? What is the future of Boko Haram, the Taliban and a plethora of other violent extremist groups? How many generations have been, and will be, lost? How will these

continuing conflicts change and evolve with emerging technology? How influential will the West be in Muslim societies? What role would China and Russia play in the futures of war-torn Muslim societies? What new chaotic actors or regional power plays will rise from these ashes? How will society as a whole adapt and evolve to never ending war and how will this alter the trajectory of Muslim societies? These fundamental questions need to be explored seriously if we are to chart feasible futures for warn-torn Muslim societies.

Elements to Consider

- The current wars in Muslim societies have their origins in a complex entangled web of geopolitics, colonisation, globalisation and the clash of ideologies and worldviews. Simple solutions will not do. War has become a complex affair. Victory must also be complex; if victory can still be a result of war. Peace must be attained not by the permanent demands of the victorious. Peace must be dynamic, subject to changing times and situations, and multilateral. States and their problems do not exist in a vacuum. Thus peace cannot live in a vacuum, it must be allowed to breath in the real world.

- Given the changing nature of war, its process and resolution must also change. There can be no winner in modern warfare: Afghanistan, Syria, Iraq, Somalia, and the Sudan provide ample evidence. There are no simply good guys and bad guys. But there are government elements, military elements, rebellious elements, super-state elements, foreign influence and stakes, and in the middle of it all civilian populations blinded by confusion and ignorance. If one was to win, then all the others must lose. A stable government is necessary for state functioning, but all ethnic minorities that stand to lose or be persecuted in resolution must be considered as well as the strength or weakness of regional elements. Wars are complex, contradictory and chaotic; civil wars even more so.

- In postnormal times, genocide and forced migration could become a way of life, leading to further rise of refugees from war-torn Muslim societies. Whole generations would grow up with the trauma of war, with the consequent growth of mental health and other associated problems.

- The West's ability to enter and exit conflict in Muslim societies is a detriment for everyone. At the end of the day Muslim societies will not be able to depend on Western intervention to resolve the conflicts that have sprouted up in the region, even if Western involvement was the initial cause.

- Continued conflict will not only have a devastating effect on the populations and health of Muslim societies, it will also have long lasting effects on infrastructure and development, the provision of essential needs for the citizens and the basic survival of the state.

Implications

- The conflicts and wars in Muslim societies will not end overnight. They could linger on for decades as long as there is continued resentment for the Other, denouncement of religious sects, denial of ethnic persons as human, and a refusal to critically engage with the postnormal world. There is a real and present danger that some Muslim societies will drift further towards oppressive extremist and fascist states. The alternative, the movement towards conflict free sustainable futures, requires conscious choice, attentive anticipation and careful navigation.

- The postnormal state of endless war in Muslim societies will be a great source of increasing complexity, chaos, and contradictions and, as such, generate all-embracing uncertainty towards the future. Muslim societies will have to develop new approaches to conflict resolution and transcending sectarian, political and ideological differences.

- Muslim societies cannot afford to be infected by closed-minded approaches tainted by sectarianism and xenophobia. Muslim societies must unite in the pursuit of common peace and approach regional conflicts from a multitude of angles and from the concerns of as many different parties as possible. Polylogue is the first best step in bringing war-torn societies together.

- Education is the only realistic and long-term solution to strife and conflict in Muslim societies. Serious reform is needed in primary, secondary and tertiary education which has to focus on opening minds, embracing pluralism, engaging critically with history, and futures literacy. Complex warn-torn societies need complex systems of education.

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Scenarios

INTRODUCTION

Scenarios are a tool for clarifying thinking about alternative futures. The term is often used in the plural to emphasise that there is not one but many futures; and scenarios are usually developed in clusters to show alternative possibilities. There are a number of definitions ranging from technical to relatively simple: according to Herman Kahn, scenarios are 'hypothetical sequences of events, built in the intent of attracting attention to casual processes and points of decisions', Eric Jantsch, suggests 'scenarios are attempts to set up a logical sequence of events in order to show how, starting from the present situation, they may evolve step by step' and Michel Godet describes them as a 'coherent set of hypothesis leading from a given original situation to a future situation'. In general, scenarios are basically outlines, or stories, about some aspect of the future intended to overcome narrow thinking and focus on multiple futures possibilities, ultimately to help us learn.

In Postnormal times, when change is accelerating and uncertainty and chaotic behaviour are all too common, there is, not surprisingly, a boom in scenarios. Major corporations, such as Shell and RAND, regularly produce future scenarios. The Millennium Project, which connects futurists around the world in networks, has been producing scenarios since the mid-1990s. It produces dozens of scenarios on a whole range of topics every year.

In futures studies, scenario work goes under a variety of labels, such as scenario planning, scenario thinking and scenario building, but they all have the same meaning. The scenarios themselves come in a variety of forms and are produced using a number of different techniques. They can be descriptive, based on extrapolation of trends, and present a range of potential futures. Or they can be normative, responsive to planning issues and concerns, and aimed at achieving a desired goal. They can also be categorised on the basis of specific topics – such as global scenarios or scenarios about the evolution of particular technologies like robots or genetic engineering. The methods for building scenarios are just as

varied – ranging from simple to complex and qualitative to quantitative, modelling to simulations. Indeed, the diversity of approaches for building scenarios has produced what some describe as a 'methodological chaos'.

Despite all the different techniques, all scenarios have a number of things in common. In general, they are written in the present tense as if the future they are describing has already happened. Although scenarios can be produced by a single researcher, the norm requires that they are produced by groups of researchers, who work as a single collective to examine key drivers, the levels of complexity and uncertainty, the time scale, the available resource, the stakeholders involved and the expected outcome. Good scenarios emerge from the contribution of many minds; that is why scenarios work is often undertaken in workshops. At least four scenarios have to be produced to provide alternatives – ranging from the worse and the best scenarios to those in-between. All methods follow a set of logical steps or stages such as setting the agenda, identifying the driving forces, determining the key factors, and framing the scenarios. The most commonly used method, attributed to SRI (Stanford Research Institute), has eight steps:

- **Step 1** - Analyzing the decisions and strategic concerns.
- **Step 2** - Identifying the key decision factors.
- **Step 3** - Identifying the key environmental forces.
- **Step 4** - Analyzing the environmental forces.
- **Step 5** - Defining scenario logics.
- **Step 6** - Elaborating the scenarios.
- **Step 7** - Analyzing implications for key decision factors.
- **Step 8** - Analyzing implications for decisions and strategies.

The first step is common to all scenario methods: it usually contains statements like 'select the topic and identify key scenario drivers' or 'define the issue and time period of analysis'.

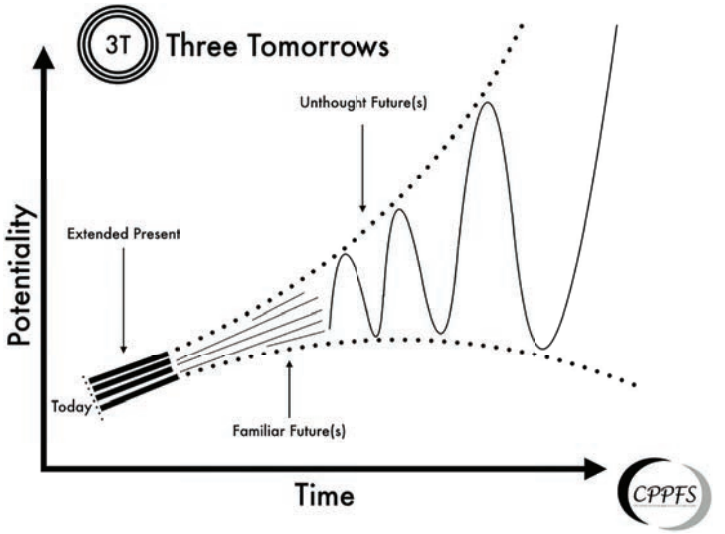
Another frequently used method to scenario building is based on a simple 2x2 matrix, sometimes called the double uncertainty approach. It is used when an analysis of the subject and its environment reveals that two basic criteria, independent of each other, are sufficient to explore future outcomes. The criteria are ranked in terms of highest and lowest impacts over the selected time horizon. Scenarios are then developed for each of the four quadrants of the matrix, representing the most important and the most uncertain factors. The result is four alternative scenarios, one each of each quadrant: one with the worst possible outcome, one with the best option, and two in between. Scenarios can be compared and contrasted for further exploration. While the 2x2 matrix approach may not reveal immediate insights, it does provide a clear structure both to generate scenarios and to differentiate scenarios in relation to each other. A more sophisticated approach known as Wilson Matrix uses a 3x3 matrix to build nine scenarios covering low, medium and high possibilities.

It is important to stress that scenarios do not predict the future. As scenarios may be based on trend impact analysis, they are sometimes confused with future projections. The difference between the two are worth stating: projections often aim to give a precise

prediction based on probabilities and tend to be deterministic, scenarios explore possible and imaginable futures, tend to be long term, and can be objective as well as very subjective. The function of scenarios is to guide our thinking about potential futures. Scenarios illuminate our choices in the present in the light of potential alternative futures; they help us to anticipate change as well as to motivate us to engender desirable change. The philosopher and futurist, Jay Ogilvy, argues that as a tool scenarios should be used in the service of 'moral outrage': rather than simply be content at what could or might be, scenarios should articulate what *should* be. The purpose is not simply to describe, analyse and understand but 'to change the existing order of things'. Where critical theory has failed, Ogilvy suggests, scenario planning may succeed.

Building scenarios in the postnormal times framework is somewhat different from the conventional methods. Our focus is on the dynamic nature of postnormal times which requires an emphasis on complexity and simultaneity. We take it for granted that the present is complex, networked, pluralistic, an amalgam of past, present and futures and postnormal. Like most scenarios work, we need to account for empirically observable trends but also give prominence to the reiterative nature of trends and emerging issues – the constant feedback loops that continuously change the present as well as the future. The simultaneous and reiterative process is explored through the Three Tomorrows structure.

The first of the Three Tomorrows is called the Extended Present. The present is not just now. The present extends into the future because many trends – such as climate change, or youth bulge or sectarian violence – are deeply embedded in the now and will manifest themselves in the coming years. Thus the Extended Present is a future that is derived from recent and current trends and is a product of these conjunctions. The second tomorrow is labelled Familiar Futures. It is familiar because it is mediated by images and imaginings of the future(s) entrenched in current trends and emerging issues (the Extended Present); and shaped by recognisable descriptors and pictures, similes and metaphors, dreams and hallucinations of corporate visions, advertising, films, television, science fiction novels and popular 'futurology' – all extrapolated and projected to create a picture of 'the' future that is all too familiar. It is a future that is both data-driven and confined to limited technological imagination. The third tomorrow is Unthought Futures: a horizon of open imagination and all possibilities that extends beyond the next twenty years. Unthought Futures are not unthinkable: but they are located outside conventional thought, the basic axioms, assumptions and mental architecture of dominant paradigms, ideologies and worldviews. It is a vista of infinite futures where something always remains unthought. The Three Tomorrows can be seen as linear, consecutive time horizons. But they can also occur simultaneously, fold and feed on each other. The unthought is not simply limited to Unthought Futures; it can exist, and influence, the Extended Present and Familiar Futures. Just as Extended Present and Familiar Futures can exist concurrently. The Familiar Futures are an integral part of the Extended Present; and both contain a great deal of Unthought Futures.



There is another important factor that we need to consider. Perceptions – both 'our' as well as 'other' – play an important part in shaping futures. And perceptions can, of course, be based on ignorance as well as be the product of anxiety and uncertainty. What we see as the norm is based on how we perceive the world as well as manufactured in the sense that it is shaped by powerful institutions and organisations, not least by ideology, religion, the media, market forces, confirmation bias and consumer desires and dreams. In post-normal times theory, this is referred to as Manufactured Normalcy Field: it determines our perceptions of what is and is not normal, and as a field that expands and contracts relative to our individual or communal focus, it is shaped by the forces of ignorance and uncertainty. To a large extent, Manufactured Normalcy Field drives the dominant trends of our time, and initiates many emerging issues.

The postnormal times framework thus required building three distinctive sets of scenarios around Extended Present, Familiar Futures and Unthought Futures. Each horizon is framed within a set of specific questions that shapes the process of scenario building. Both for Extended Present and Familiar Futures we can generate overarching scenarios for the Muslim World as a whole as well as sub-scenarios that cover specific issues or aspects. For the scenarios for Unthought Futures, we need to unpick the assumptions of manufactured normalcy field and look outside the conventional modes of thought. Of course, one can make scenarios as elaborate and detailed as one wants. However, we have chosen to keep our scenarios short and succinct; but have produced a reasonable sum to throw light on a number of different issues.

It should be stressed – again – that the scenarios produced here are not forecasts let alone predictions. Rather, they are a tool for exploring and thinking about alternative futures of Muslim societies. They should be seen as the beginning of a long overdue discussion on Muslim Futures.

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THE EXTENDED PRESENT SCENARIOS

The Extended Present is the projection of the present, largely in terms of deeply embedded trends, into the future. The scenarios for this horizon are framed around the following questions:

What are the logical conclusions to the trends discussed thus far?

Have these trends put Muslim societies in Postnormal Times?

What is the nature of change that these trends allow?

Will the impact of this change result in advanced complexity, higher occurrence of chaos, or the compounding of contradictions?

What new element will result from these conclusions and impacts?

TORN AND BURNED

Muslim countries endure the worse impacts of Climate Change. In certain places, such as Kuwait, Tehran, Karachi and Cairo temperatures have risen above 50 degrees centigrade. There is widespread water scarcity. Urban centres are heavily polluted. In general, the environment is rapidly losing the ability to sustain life. Some countries have tried to combat the situation as a nation; but other places witness how the wealthiest buy their way to more liveable locations while the poorer face desperate situations. Basically, Muslims are entangled in sectarian disputes and fighting each other to work collectively

to improve the environmental situation. Not surprising, violence escalates and the conflicts for the available resources multiply. Additionally, the situation provides ample legitimation for international terrorism to surge. Huge populations are on the move hoping to find a more liveable environment. There is talk of the West blockading the MENA region; and creating a barrier so people inside cannot leave their homeland.

CELL STATES

It is an obvious solution. Seven out of ten hottest places in the world are in Muslim countries. In many cities, the temperature is way over 50 degrees centigrade. There is an accompanying water shortage: on average, the water deficit has doubled in the last decade; in some places like Yemen, Sudan or Algeria it has tripled. In many coastal areas the use of desalinization systems has alleviated the water shortage but the cost, in terms of energy requirements and brine generation, has been high. Offices and business are now opened at night, rather than during the day. Water shortage has had devastating effect on agriculture. There is neither soil to sow or grass to raise cattle. Desertification is advancing faster and faster and there is less arable land to produce food.

Considerable efforts are being poured into transforming the solar energy that is torching Muslims in their countries into an energy that could be used to improve their situation. But limited reliance on solar power has not abated the problems. There is never enough energy to meet the local needs, let alone to fight desertification.

So it is hardly surprising that many Middle Eastern countries have chosen to become batteries, the so-called Cell States. Gigantic swathes of land, stretching thousands of miles, have been turned into solar energy farms. Latest and most efficient technology is used to produce vast quantities of solar energy that not only meets local needs but feed far away countries through elaborate networks. In some regions, the access of energy has been used to test new initiatives, in some cases recovering and updating old agricultural practices and techniques, to develop new crops.

DESOLATE PANORAMA

Consumption automation is described by *Consumer Reports* as 'Mission Perfected.' Artificial Intelligence bots and robotics mainstream retail, manufacturing, and finance. Robot workers, drones, and self-driving vehicles have turned production into a 24/7 on-demand practice. Unemployment continues to skyrocket as welfare packages dry up and institutions are unable to train yesterday's labourers for the high skills needed to re-enter the workforce. Day by day the only remaining hope lies in the young who

are being brought up by a reformed education system that prepares them for the highly skilled work available to them in the future. This hope is shared by the massive influx of high-asset individuals, as they are called, from Latin America, Africa, and South Asia, flooding into the US and Europe and enrolling their children in schools at record rates.

Before these hopes can come to fruition, internal crises in the US and Europe demand answers and the people demand those answers now. Those calls are being answered by right-wing movements across the world. They say a drastic re-examining of their national spirit is needed to overcome this lapse in progress. They preach total free and open markets beyond the control of federal governments and the expulsion of dangerous immigrants who threaten violence and social burdens upon the state. Social media is the perfect platform for disinformation. As AI is capable of video spoofing and fake news construction, it is difficult to distinguish propaganda from reality. Bots flood any and all public forums. Democracy is reduced to a simulated computer algorithm repeated over and over again by bots. An increasing sense of distrust becomes the zeitgeist.

Islamophobia became a rallying cry within government halls around the world, and the death of liberalism is accompanied by standing ovations. In the US populism has transformed both of the major political parties as local militia ranks grow in number and armament, even rivalling that of the federal military. Personal gun sales are at an all-time high along with mental health diagnoses and gun related violence. In Europe, external borders are at their most solid creating numerous disputes in the United Kingdom, the Balkans, and Russia while making nautical trade an increasingly dangerous game. National fascist movements are strong, if not in power, all through the continent. Some European Parliament representatives have walked out in protest. Europe is a thinly held together regulatory body that is viewed by most as simply a ceremonial body, vestigial to European politics. Acid, knife, and self-driving vehicular attacks are almost as frequent as American shooting attacks.

Although Muslim birth rates continue to increase, Muslim families are constantly mutating. A staggering number of single mothers is changing the face of diasporic Islam fleeing from the war-torn Middle East and Africa. An entire generation of children are growing up in a world where fact and fiction are blurred. Two-parent homes are few and far between. High numbers of the Muslim youth, predominantly males, turn to gangs and acts of violence to express their alienation. Nearly insurmountable requirements and restrictions on citizenship and property rights prevent Muslim families from any sort of social mobility. Employment is only open to the highly skilled, but due in large part to national protests, to remain competitive, businesses are forced to tighten their hiring policies. Social media fuels contempt both among nationalists and Muslims. Most discourse and policy is handled by the arguing of millions of bots in online forums. Human belief and action make their prescriptions reality.

UNITED MUSLIM REFUGEE LAND

The best way to see it all is through the Drone's lens, or as we call it Drones-Eye-View. The lifeless images all have a hazy sepia hue and are set to a mechanical hum for a soundtrack.

Recycled plastic walls form pods, more like containers, that resemble the cold efficiency perfecting cubicle filled floors of a corporate office. The plastic huts vary in size based on the size of the displaced family. At the centre of these pod based cul-de-sacs are post stations where clean drinking water and daily Aid packages are delivered. Low grade drones provide for free Wi-Fi to the tenants of these camps. Massive concrete walls contain the cul-de-sacs, but it is hard to determine if their purpose is to keep the conflict out, or to keep the refugees in. The wall snakes around the greater Cairo city limits and the camp city covers large swathes of the Nile River Valley.

The walled pods of blue and white continue up through the Suez forming a lobe each for the West Bank and Gaza Strip. Armed guards patrol the Israeli territory borders. The pods remain the same, but one notices more décor as messages of hope are painted on the pod roofs and Palestinian flags fly all about.

The community camp flows south into the vast deserts of Saudi Arabia. The pods here are more pointed, and each roof has a solar panel. Wind turbines are sprinkled about. Small community centres have been repurposed into schools and mosques. Makkah is an eye in the pods, only connected to greater Saudi Arabia by high speed trains that run in all directions out of the holy city. Most of Yemen is encased within these concrete walls. A lobe erupts out into the borderlands of Oman. A few years ago as the walls came up, a UN led effort carried out by US, UK, European, and Bangladeshi volunteers transported the Rohingya population to this refugee suburb.

We zoom out on the Arab peninsula, up seven degrees, and our eye closes in on the walls path upwards into much of Syria and Iraq. Here most of the city is comprised of canvas tents, the pods have not been constructed here yet and due to lack of funds, may never come. Tech firms have provided the clean water filtration system that recycles waste, rain, and sea water desalinated and purified for consumption. They also provided the Wi-Fi drones and smartphone charge stations.

Further north a lobe reaches into the borders of Turkey, Iraq, Iran, and Armenia. Most of the homes are constructed of canvas, old pod parts, and rubbish fashioned together in blocks of rooms with a central garden. Here Kurdish, Chechen, and Uyghur Muslims live in relative harmony. The walls here are the newest and have not been worn to weather and graffiti.

Most of the conflict zones only remain as ruined ghost towns on the outskirts of the United Arab Refugee Land. Electric speed trains carry the few refugees lucky enough to be relocated to the West, but a struggle against Islamophobic culture and bureaucratically entangled paths to citizenship await them at their destination. As conflict dies down like a fire suffocated from oxygen, the refugee city appears less and less like dislocated families and more like new permanent residences. Aid comes as it is given, which is

becoming less frequent as media in the West has largely lost interest in the area. Single mothers and families run by eldest children are the norm. Surviving grandparents have a low life expectancy, but camp workers and families try to give them the most comfortable living possible. Disease is largely kept at bay, but mental health epidemics are beyond maintenance. This is everyday life in the United Arab Refugee Land.

SMART YOUTH

In Muslim societies, eighty-two percent of the population are twenty-five years old or younger. Despite the sunny disposition that was promised in this new technological age, inequality is rampant, the wealth gap only continues to deepen, and with each day the planet dies a bit more. A group of highly educated and tech savvy young Muslims decide to do something about the dire state of their societies. They meet to exchange ideas and decide to seek out and connect with like-minded young Muslims in other parts of the Muslim world. A small but highly active social media network is established. After several months of intense discussion, a consensus emerges: there is power in numbers. The network has to utilise its power to change things.

The networks continue to grow – first slowly, then rapidly. As more and more young people join the network, it spreads throughout the Muslim world with millions of subscribers. It acquires the capacity to self-organise. When something needs to be done, there is always someone who knows how to do it, and numerous others who are willing to undertake the task. For some time the members of the network collaborate to solve local problems in one country or another by providing advice, expertise and, where possible, physical help. Then the networks shifts gear.

Its first target is the millionaire CEO of a media corporation of a Muslim country. He holds a monopoly on major news outlets, controls internet and cable providers, and distribution of Hollywood films in a number of Middle Eastern countries. A simple message is posted to the CEO's twitter feed demanding that he break up his monopoly. The CEO's response is to laugh off this feeble attempt at a youthfully idealistic sense of justice. What he did not understand was that this Muslim youth network accounted for almost half a billion users, all equipped and savvy with a smartphone. Their black screens ever watching and ever ready to act. Within a day of the CEO's condescending tweet a boycott movement was launched in his country – supported by an international effort. By the end of the first day, videos, photos, and demonstrations are tagged from Lahore to Timbuktu, all throughout Indonesia and Malaysia, even in Europe and the US. There are widespread demonstrations against his company – appearing and disappearing like a flash mob. Profit margins tank, but the CEO is unmoved, this is a phase and it shall pass. By day four, protests call for his resignation, government action and justice all across the globe and internet. Sweatshops owned by his company stage strikes, symbolising their discontent by holding up their phones and recording their disobedience. The production

losses in Saudi Arabia, Sudan, and Libya are too drastic to be redirected to China or South America. At the media empire headquarters in Abu Dhabi, collected youth throw loaves of bread at the billion-dollar building. A message spread asking for all the youth to post bad experiences they have had with the company or its CEO. Within eight days of the CEO's initial denouncement of the Muslim Youth, he is asked politely to resign as he is delivered an indictment accusing him of at least fourteen counts of sexual harassment and assault. On the morning of the ninth day, a representative of the board officially announces on social media that the corporation will be broken up into seventeen independent corporations.

GENERATION WASTED

Fertility rates have declined for the first time in over two decades. This is largely due to the fact that Muslim youth take a pessimist view of marriage, having children and creating families.

Unemployment is at an all-time high and there is no optimistic option. Automation and AI has turned the West away from the unskilled and cheap labour that the Muslim societies of the global South once provided. Robots have made humans irrelevant for everyday functions.

The state of education only makes the picture gloomier. A degree may be necessary for finding employment, but it provides no applicable skills or knowledge. Universities are corporations and essentially one's education is dictated by the amount one is able or willing to pay. This leaves Muslim youth with insurmountable debt and with worthless qualifications in a world without jobs. The accent is on poverty, pollution, and alienation.

Wars still rage, leaving a youth physically handicapped and irreversibly mentally scarred. This generation is a generation of orphans who have never known peacetime. It is known as Generation Wasted. Politics, democratic or otherwise, has failed them. Economics has botched up their prospects. Conflict and survival of the fittest are the only pillars by which the world operates. Many of the disenchanted turn to mysticism or extremism. At least they can hope for paradise that follows death and release from this cruel world. Other youth see the extremists as the establishment wearing a different hat. They believe in radical rebellion against all historical narrative and wish to launch a jihad against the jihadists. Minority sects are accused of being heretics and persecuted. What results is an entangled messy mosaic of belief constantly warring against and destroying itself.

Many seek refuge in drugs. Use of opium, hashish, cocaine and *bhung* in Muslim societies is amongst the highest in the world. Overdosing and blood born pathogen numbers are on a steady exponential increase. Bombings and target killings are now the norm. Dramatic acts of suicide, including self-immolation, are frequently a part of the daily news report.

Popular music speaks of frustration, anger, distrust, and violence. Art and literature sings of hopelessness and for the most part is largely uninterpretable, expressions of utter anger.

Government approval is at its lowest ratings in recordable history. What started with large and populous demonstrations has fizzled out into an extreme apathy. Military registration forms and electoral ballots are publicly burned. Laws and ordinances are loudly and publicly denounced and disobeyed. High apathetic attitudes call into question the legitimacy of electoral results and little interest in current political structures leaves many government apparatuses dysfunctional and defunct. Little interest is given to looking for a solution and, in general, nobody knows what to do. The youth are beyond organising and the current infrastructure is incapable of innovation. The rest of the world moves on without the anarchic and degenerative Muslim societies.

CHINA'S MUSLIM LEAP FORWARD

It is a rough life for the young Muslim today. The competition is fierce for a decent life and career. The West has tightened its immigration policy making it nearly impossible to attain citizenship. Only some low skill jobs remain, but most look to the West for education. University degrees do not help much in a market place supersaturated with American and European master's degree holders. The Muslim world's devotion to degrees in Islamic Studies and other out-dated disciplines have produced an unprepared workforce for the age of automation and technological advancement. Unfortunately, most Muslim youth must settle for low skill, unfulfilling labour in the countries that have not yet been fully automated.

China has become hyper-industrialised and in light of the rapid population drop following the reimplementation of the One-Child Policy, it is no longer the source of cheap labour in the world. At the Third Plenum meeting of the twenty forth National Congress of the Chinese Communist Party the President of China unveils his latest plan to give greater autonomy to Xinjiang Province and for the Year of Celebrating Islam in China. China's greater development of trade relations with Malaysia, Indonesia, Bangladesh, Pakistan, and Afghanistan along with expedited citizenship brings about a massive flood of cheap labour into China.

The problems of both the Chinese Communist Party and the Muslim Youth appear to be solved. Cheap factories all over Xinjiang produce a new wave of economic prosperity as China tightens its hold on Asian and Pacific politics and economics. Mass production of halal paraphernalia win global points the world over for China's greatest success story. The Party and peace are maintained through mandatory training courses that teach labourer's 'China's Five Thousand Year History of Victory' and 'Marxism with Chinese and Arabic Characters.'

HAMAM WARS

Perhaps we would never know who fired the first shots. Was it the cyberwar brigade of the Iranian army? Or someone from Qatar angry at the Saudi led embargo of his/her tiny state? Maybe it was Russian hackers seeking ransom? There is even speculation that it was a teenager hacker from Macedonia. No doubt historians will debate the point for decades to come. But it was the proverbial straw that broke the camel's back!

It was a cyberworm that blacked out Riyadh's entire grid. The Saudi capital was in utter darkness for weeks. Patients in hospitals were left without support systems – many died. The desalination plants ceased functioning and the city suffered from a severe water shortage. Traffic accidents – already higher than anywhere in the world – accelerated. It took the efforts of a special team of American specialists to get systems back online and to clear servers of the highly discriminatory bug. The Saudis did not waste time in pointing a finger at Iran. They saw it as a declaration of war. The decade long Saudi/Iranian Cold War turned decidedly hot.

The Saudis responded with Stuxnet 4.01, the latest version of the cyber weapon they had acquired courtesy of Israel and the US. It was a devastating attack that caused a meltdown of Iran's Darkhovin Nuclear Power Plant. The damage far exceeded Chernobyl and Fukushima and is being compared to Hiroshima and Nagasaki. Within hours, the Iranian navy blocked the strait of Hormuz. The Persian Gulf turned black with the sinking of several oil tankers and warships.

The US and NATO quickly rallied to Saudi Arabia's aid as Russian nationals in unmarked uniforms are reported to be fighting for Iran. It is all so reminiscent of the eight-year Iraq-Iran war. Saudi and American warplanes are bombing cities in Iran. The Iranians are sending wave after wave of young martyrs in the direction of Saudi Arabia. Sometimes Saudis advance into Iranian territory; sometimes Iranians advance into Saudi territory. Much of the early days of the war are comprised of valiant naval battles and civilian rescue missions. The unbearable heat is taking its toll on both armies as well as a string of Sunni and Shia militias fighting on the ground. "It's like fighting in a hamam", one commander has been reported as saying.

The conflict is now so complex that it is beyond explanation. It is hard to tell who is funding and supporting who. American forces are on the ground actively assisting the Saudis. But hacked documents and emails from the State Department suggest the US has also been supplying advanced weapon systems to Iran. China claims neutrality though its financial statements tell a different story. Pakistan seems to be backing both sides while trying to stay neutral!

There are constant cyber-attacks in Saudi Arabia as well as Iran. They can vary from deadly hack assassinations to attacks on banks, hospitals, transport systems, and electric grids. It is chaos everywhere; and everywhere it is increasing. Cyberwar has given rise to cyberanxiety, there is no safety in reality, be that virtual or otherwise. The hajj is cancelled as the safety of travellers to the holy cities cannot be guaranteed.

There seems to be no end to this intractable war. Peace conferences in Islamabad, Kuala

Lumpur and Tangiers have produced no tangible results. It has been over ten years and no one knows what would actually constitute an end to this war. Some say it will never end. After all, have Shias and Sunnis not been fighting from the seventh century onwards – right from the days of Kerbala?

DUBAI UNLIMITED

The name of the game is money. The object, take all that's out there waiting to be willingly given. Following successful financial endeavours in Dubai and the boyish fascination with the Silk Road reimagined, developers have finally finished the super shop entertainment complex that takes command of what Arabs have done best for centuries – the perfection of the art of trade. The Silk Strip is the duty-free capital of the world.

Multi-lane automated tread walks can let a consumer walk all about the Arab Peninsula without ever leaving the shopping complex city! Begin in Cairo and head towards Makkah, and *en route* you can see Atlantis risen, or tour the Louvre, and don't forget to make time for a performance at the Sydney Opera House. Why see the dusty old ruins when you can, on your way out of Cairo, stop by the reimagined Pyramids of Giza presented for your viewing as the Pharaohs of old intended! Next you'll walk right into Neom, the capital of Saudi culture – the city of the future. Be sure to visit the Met Neom where the famous da Vinci piece Salvator Mundi is housed. Enjoy a crepe at the feet of the Colossus of Rhodes. The British Museum even has a Centre for Cultural Studies where you can see live performances by the world's finest dancers reinacting rituals and dances from less civilised peoples.

Why not go for hajj via the Silk Strip and why not do it in style? Every household needs its own Kabah, why not get yours at our modest price? Prayer beads, Ask-An-Alim stuffed interactive toys, and professionally designed prayer rugs go great with our many Muslim fashion threads and don't forget to have a pre-packaged halal snack in between shops. All of these are available on the fast track to Makkah. Along the way, take a little time to relax at the many mega hotels along the way. But be warned: they are pricy.

Once in Makkah, illustrious builds that are themselves a work of art shield consumers' eyes from the ravages of war and relics of a less 'in style' era of history. Many of the buildings are large and unfeasible wastes of space, but they are some of the tallest in the world that challenge contemporary concepts of architecture and art. It would not be wise to look into the energy consumption on these buildings. The infrastructure is a take on modern art in all of its dullness with a post-modern twist, that still retains a sense of classicism in the eyes of consumers. Clock towers and virtual reality overhead screens blot out the sun, taking you instead to the highest mountain tops or the furthest depths of the seas. Don't forget to take a fair amount of Kabah selfies and post it to your friends around the world using the four minarets enabled Wi-Fi

system that is the strongest wireless motors in the world. You should put your money where your faith is. All semblance of Muslim culture has been priced and is kept in good stock. After a hot day about, why not cool off for a film at one of the mega IMAX 4D theatres a few steps from the Sacred Mosque?

At the Silk Strip, Makkah is the centre of our world, but don't forget to walk along the other old hajj caravan routes to Riyadh were you can catch a show at Sea World 2 or get the royal treatment at the Hanging Gardens of Babylon. Head to Baghdad where you can see the Great Wall of China and have a family fun filled day in Iraqi Disneyland. In Damascus a Statue of Liberty welcomes all to the city remade in a fusion of Chinese and Dutch canal systems. Make sure to take the self-driving bicycle tour. At the southernmost point visit Sana for all the best of the West at the Getty Museum or a bull fight at the Colosseum. Bring your friends to the St. Peter's replica self-service megamall.

World-class chefs offer you any cultural cuisine your heart desires, why not mix them? All is as easily accessed as your credit card from your wallet. The Silk Strip is a global bazaar in that it is a collection of all the world's junk. There is no need to develop a culture, when you can over-night express ship in another. This is what the consumer wants and to win the game, this is the single quickest way. The initial investment may cost more than dollars, pounds, euros or riyals.

DAEISH STRIKES BACK

The conclusion of the Syrian War was celebrated the world over. While, yes, much of Syria and Iraq lie in ruinous ashes, Daeish or Islamic State was also defeated once and for all. But Daeish Islam, like many diseases, especially those of the mind, is never actually cured. Rather, they lie dormant until their next opportunity. The world continues to spin, it is a new day. The Muslim youth population is burgeoning throughout the world of accelerating complexity. Alt-right nuts come and go, but their chaos gain in frequency and impact. Islamophobia remains intact within the subtext of Western culture. It is never overt, but is trails on the coattails of other racist acts against blacks and Jews. The everyday seems to normalize, but that odd feeling never goes away. Ghosts of violent Islamist extremists haunt Syria, Iraq, Jordan, and Egypt as well as New York, London, Paris, Brussels, and Berlin.

No one really knows where they came from. It started with shared images. Individuals dress up in Western business attire, but with their heads covered in black masks. They pose outside major landmarks holding up the Black Standard. Outside One World Trade Centre, Buckingham Palace, The Hall of Mirrors, St. Peter's Cathedral, The Red Square, Tiananmen Square, and inside the Tokyo bullet train. It did not stop there. More photos surfaced in Giza, Istanbul, Tehran, Riyadh, and Makkah. The pictures couldn't have been real for people in the pictures are unaware of the Black Standard. Or maybe they are not too concerned!

Meanwhile, the global news networks did not think it was important to broadcast the major megadata heists of the top social media and tech companies. After all, data hacks were as common as chips. And it appeared that nothing had been taken. But had something been changed? Every owner of a Facebook account was tagged in a video. An army of bots working at rates never before recorded, shared and liked the video so that it reached all of the top international trending networks within three minutes of publication. The video was simple. It showed masked men training for combat, endlessly large underground rooms filled with computers and masked users, and robots and drones rolling off assembly lines. The voice over the video thanked Allah for the return of Daeish, sent salutations to the Muslim world, and declared a new jihad against the infidel. The failures of the Islamic State have been noted and the second Islamic Emirate would not exist by the territorial boundaries of the Western notion of a nation state. The new Daeish, the voice over said, is beyond physical space, located in the infinite cyber space. 'No one is safe for we are everywhere'. The video finished with short clips of past terror from planes in New York, to masses running from the underground, to beheadings, and heavy artillery being fired.

Small, commercial drones were redesigned to carry out the assassination of Taliban puppet politicians in Kabul. Afghanistan's fragile political structure was flung into a deeply chaotic state as other Muslim states banned commercial drone sales and implemented drone free zones. It was hardly surprising that when similar commercial drones appeared in Tehran and Qom, that they were shot down by the Revolutionary Guards. But they were meant to be shot down. While these drones were armed to look like assassin drones their stores were packed with a genetically engineered, antibiotic resistant strain of flesh eating bacteria. The bacteria spread rapidly and soon vast swathes of Iran had to be quarantined. Simultaneously, nanobots appeared first in Kazakhstan and Russia, but were quickly found throughout Egypt and the Arabian Peninsula. They were programmed to swarm and destroy all agricultural life.

Just as markets began to panic along with governments all around the globe, a flash drive was inserted into a computer in a small town in the Federally Administered Tribal Areas (FATA) of Pakistan. Within fifteen minutes, a Trojan virus released a code that launched a coordinated attack on the infrastructure of Pakistan. The state was paralysed. The damage had been done. Afghanistan, Pakistan, and Iran were at the mercy of the Daeish neoanarchy.

Daeish scientists have developed nanochips that could travel through the blood when ingested and attach themselves to the cortex of the human brain. It is reported that they are looking for a delivery system that can be used to infect people. This was discovered through the autopsy of a suicide bomber who killed himself and two hundred and twenty-seven others outside the Brandenburg Gate. Drones are now banned throughout most of the world, but are protected from being shot down following the events in Iran. Saudi Arabia, Egypt, Jordan and Pakistan are in a full blackout, Wi-Fi enabled devices are banned.

The world is on high alert, but does not know where to begin or what to do. Daeish strikes at will; and there is no target for retaliation.

FAMILIAR FUTURES SCENARIOS

Familiar futures are projections of pre-existing ideas, notions and images on to the future. These common and recognisable images can be a product of trends as well as emerging issues. The scenarios for this horizon are framed around these questions:

What actions will lead to the perpetuation or alteration of the Extended Present Trends?

What is the logical progression and result of Emerging Issues?

Must Jellyfish become Swans become Elephants become trends?

How will the failures of the Extended Present drive the emergence of the familiar future?

What futures become more probable and what futures are preferred?

AFTER THE WEST

The West is truly dead. After its rapid withdrawal from the global theatre and civic unrest edging on war, the United States is no longer the leader of the free world. Numerous exits and internal successions within Europe have left the EU a shell of its former aspirations, led by a power hungry and unpopular France and Germany, which is in the midst of another identity crisis. Great Britain has finally burnt the last influential oils of an empire long past its sell-by date. The United Nations has lost all relevance as it is a body no longer capable of consensus or action.

The death of Vladimir Putin leaves Russia without direction and in a state of quiet implosion as sweeping reforms attempt to repair the damage of failed policies. China looks to be the last super power of the old world order, but it is one among new global powers:

India, Turkey, Brazil. Power is no longer split between two poles, it now exists in a plurality. The alliances and partnerships made by the Middle East and Africa are also drastically changing the global balance of power.

Much of the world's wealth is concentrated in China and India, in city states like Singapore, and global corporations such as Alphabet and Apple. But it has become nearly impossible to track wealth as the global economy has entered nose-dive state of boom and bust. Each bust digs deeper and deeper as each boom is shorter than the last, and unable to break even with the last depression. Climate patterns are at the will of chaos. Weather is unpredictable and increasingly destructive. Military forces are torn between international conflict, internal unrest, and multilateral rescue efforts. Automation has replaced human intellectual and physical labour and is producing consumer goods that humans are no longer able to afford.

Education has collapsed. Discipline-based departments are closing and tenured positions are disappearing. Knowledge building, skills training, and usefulness is only possible through interdisciplinary and transdisciplinary work. Students stand to learn more from Greek Forum style café universities or AI mediated online courses than the abandoned universities of old. Knowledge structures are broken, but an opportunity lies in the creation of new ones to begin answering the complex uncertainty of these Postnormal Times.

The fragility of this period is consigning old ideas and paradigms into the dustbin of history. New paradigms are struggling to be born. Some are stillborn. Muslim societies are experiencing tectonic shifts – rapid change that brings both opportunities and spectre of collapse. A power vacuum exists and the broken knowledge structures stand to change the future dynamics of power. China appears a clear successor to the US, but is it simply the US 2.0? Have no lessons been learned from the era of Western dominance? The conditions demand new modes of politics, governance, economics, education, and identity that present a direct challenge to future Muslim societies.

Muslim countries struggle to shape their futures as the age of superpower comes to an end. How can, it is being asked, power and new knowledge be used for the betterment of all humankind? There is much to do; and a great deal to achieve. The world is an oyster: someone has to reach out and grab it.

UNATTAINABLE MADINAH

A coordinated attack on the holy cities of Makkah and Madinah stuns Muslims everywhere. A combination of dirty bombs and cyberattacks with devices designed to generate Electro Magnetic Pulses has totally devastated the infrastructure of the Arabian Peninsula. 'Arabia has been sent back to the Middle Ages', it is said. Middle Eastern states are left without access to their resources (whether money, oil, gas, or major institutions); their military prowess reduced to a tiny fraction of its previous might; hundreds

of thousands of people are affected by biological or radioactive poisoning, some manage to flee from the region. In a world where wealth is mostly in bytes, both affluent monarchies and non-so-affluent dictatorships face full-blown chaos and collapse.

There are different theories regarding the authorship and execution of the attacks. The most widespread explanation is that such a coordinated and sophisticated attack, with a high level of planning and preparations, must involve a major superpower. Fingers are pointed at the US, Israel, Russia and even China. There is also suggestion that the attacks were the work of a new highly technologically savvy sect: *Al-Mashih ad-Dajjal*.

But speculations aside, one fact remains: it will be physically impossible for Muslims to perform the hajj – for a very long time. Most Muslim see this as God's punishment for not following the right path of Islam; each sect blames the calamity on *acquida* (beliefs) and *shirk* (unbelief) of other Muslim sects. Some sects have isolated themselves totally. Others aggressively malign and attack all Muslims who are not part of their group.

Turkey and Iran see the dire state of affairs as an opportunity to gain the leadership of the Muslim community, but other contenders – Pakistan, Indonesia or Egypt – undermine their efforts aggressively. But all Muslim states are well aware that what happened in Arabia is a warning for all Muslims: behave and be subservient, and keep a low profile unless you want to suffer the same fate.

It is truly a dark age for Muslims. Even before the attack many countries were facing exceptionally hard times: unbearable temperature rise, serious shortage of water, raging unemployment, social strife and universal suspicion of Muslims. States and communities crumble one after another, in a domino effect.

There is despair and anger everywhere. Muslims have lost everything – even the city which gave birth to Islam, towards which they face five times a day – Makkah – the city of hajj, the very symbol of their faith. Could it be that God has forsaken them? Could it be that they were not following God's will? Could it be that they failed to change themselves and are living the logical consequences of their actions?

AN INEXHAUSTIBLE SPRING

A coordinated attack in their most holy places leaves Muslims in a state of shock. Jerusalem and Madinah are devastated. The Prophet's Mosque is destroyed. Makkah suffers the worse: a series of dirty bombs leaves the sacred city completely uninhabitable. The Kabah is obliterated. Some bombs were biological containing flesh eating engineered bacteria; a second set included radioactive isotopes. It is estimated that it will take centuries to recover the city.

A global wave of Muslim solidarity sweeps the world. Outrage and disgust are expressed for the attacks; and attempts are made to discover the identity of the culprits. The

international Court of Justice leads an international investigation; and the fact that the main suspects do not recognize its jurisdiction does not diminish its symbolic effect.

The attack has a boomerang effect in reinforcing and galvanizing Muslim unity. All Muslims regardless of their location feel the attack was directly aimed at them and react accordingly. The Organization of Islamic Cooperation is chosen as the first tool to articulate and coordinate international Muslim action. It succeeds – despite its long history of failures. Muslim countries come together on a united platform: they focus on what they share, what unites them, and not on what divides them. Muslim diasporas in the West enthusiastically join in the common cause.

Sunnis and Shias develop a shared theology. Religious authorities from all sects and traditions reunite in a huge conference in Istanbul. They recognise the criticality of the moment and acknowledge that every Muslim state, nation, community, sect and individual has to work towards rebuilding the House of Islam. Parallels are drawn with the worst moments of the Prophet's life in Makkah and with the *hijra* – his migration to Madinah. Makkah may have gone for now, but like the Prophet, Muslims will return to see it flourish under the banner of a reformed, united Islam and Muslim world. Muslim states can pool their scientific, technological, economic and intellectual resources to meet the pressing collective needs of their citizens. If the first priority was to assist those injured or infected by the attacks, very soon efforts are made to solve other demanding problems such as securing access to resources, defining strategies to fight the effects of climate change, improving governance, strengthening social inclusion, promoting health and wellbeing and developing a radically new and relevant education system.

For the time being, using state of the art virtual reality, pilgrims are offered a new way to perform hajj. Many scholars and religious authorities sanction the new option. They emphasize that hajj has always been firstly and foremost a spiritual journey and that all pilgrims must approach hajj as an introspective travel. The virtual Kabah will become real after the Muslim civilization is rebuilt, brick by brick, to meet the demands of changing times.

What could have been the beginning of the end has turned to be a period of Muslim revival and resurgence. Some even boast that Muslim societies are set to surpass the glories of the so-called Golden Age.

COLONISATION 3.0

The tech company CorteDisk is still working out the kinks of uploading the brains of the deceased, but has already began constructing terabank libraries all throughout the United States and Canada. These libraries hold the knowledge of the world's greatest thinkers. CorteDisk's mastery of the brain-internet interface has revolutionized entertainment, education, style, and culture. New apps, updates, and data are easily downloaded into

one's brain either in the online CorteDisk Shop or at a Brain Service centre near you. CorteDisk tech is all the rage in Europe and North America. Russia and China both welcome the tech, but have placed tight constrains on the content available within their borders.

The CEO of CorteDisk wants to bring his revolutionising technology to the less fortunate and is propelled by a mission to give back to the world. Supported by the US State Department and Japanese nanochip technology, CorteDisk's newest interface brain chip, Muse 9, can be delivered orally instead of via injection. A plan to distribute the Muse 9 to Muslim societies prioritized war-torn and impoverished countries to be the first recipients. Backed up by drone delivered Wi-Fi, the Middle East and Northern Africa uploaded their brain profiles to laptops and smartphones to begin downloading all the content they desired. Educational as well as entertainment data could instantly be downloaded.

The education provided are in accordance with Western disciplines and Western narratives on history. English, French, and German are the main languages most thoroughly developed. All the data is framed within the ideology of democracy, property rights, and neoliberalism. Western literature, news, film, and music are easiest to download and rate most popular among Muse 9 users. Western fashion and style is as easily seen in Lagos, Kabul, and Jakarta as it would be in New York, London, or Paris. Even more subtext gives rise to radical individualism and atheism resulting in wide spread denouncement of tradition and community.

However, the CEO of CorteDisk's attempts to civilise the global South has hit an unexpected turn. While the data propagated definitely came from the West, the nanochip technology used in the Muse 9 was built in the sweatshops of China, where they programmed small, overrides that morphed the data to ultimate tenants in compliance with the Chinese Communist Party of authoritarian obedience, Maoist revolutionary sentiment, and highly efficient and corrupt business practices.

Muslims are simultaneously colonised by neoliberal atheism and revolutionary communism. A war plays out in the very real minds of Muslims – the Cold War between the US and China.

TRANSISLAM

It took a long time but has now definitely arrived. A reformed Islam with a reformulated Shariah at its heart. It is interesting to note how the perception and representation of the Shariah has changed from a word used to scare little children to sleep to a concept now widely associated with the promotion of humane, inclusive and socially just policies and strategies. Perhaps it would be more accurate to say that, in a complex, interconnected world, Shariah has become a problem solving methodology. And you don't have to be a Muslim to use it.

It all began decades ago with the attempts to reform religious thought by modernists, traditionalists, feminists and all hue of critical folks and international reform oriented organisations. At some crucial moment in history two things happened simultaneously: a plethora of different efforts reached a critical mass; and reformists with different agendas and outlooks realised that their differences were more apparent than real, and all could be accommodated within the higher objectives – *maqasid* – of the Shariah. From then on, things spiralled and have now reached the peace and prosperity, creativity and problem solving that we witness in the House of Islam.

Two key realisations played an important part in the astounding success of the reformers. The first realisation was that everyone was equally right and equally wrong. The seriously appalling consequences of modernity had to be acknowledged, but modernity per se could not be ditched. Tradition was important but only its life enhancing aspects were worthy of conserving; and it had to be reinvented within the framework of *maqasid al-Shariah*. The feminists had a point; but the aggressive anti-tradition rhetoric had to be exceeded. The emphasis was on integrating the best of everything; it produced a new mode of thought that is *trans* – over and beyond modernity and tradition that shaped an original synthesis. That is why some people refer to it as TransIslam.

The second realisation naturally followed from the first. If everyone was right and wrong then everyone had a right to criticise and be criticised. They called it *muhaasabah*, a term that is not found in the Qur'an but was derived from the phrase *yawmu-l hisaab* – the Day of Judgement. It was defined as a state that embraces criticism and self-criticism in all aspects of thought and learning. The practice of *muhaasabah* led to another innovative concept: mutually assured diversity, or MAD for short. What was – indeed is – seen as mutual is that the human condition is a cultural condition and is an essential relational attribute, an enabling feature of knowing, believing, being and doing. It is an acceptance that all interpretations of Islam, and attempts at understanding it, are culturally oriented and are equally important. Even the interpretation one regards as heretical has the right to be – and has something important to say. Mutually assured diversity played a vital part in the realisation – so widespread today – that there is more than one way to be Muslim. It has brought the Muslim people to a point where everyone accepts that there is no single, right, absolutely correct way to be Muslim. The creativity that we see around the Muslim world is a product of the universal recognition and acceptance of the multiple ways that Muslims have of seeking meaning, of comprehending Islamic values, and means of delivering the ethic of Islam in daily life.

So thank you to all the reformists, of past and present, who put aside their differences to work together in the spirit of *muhaasabah* and MAD. The synthesis of TransIslam is ushering Muslims towards a new stage in their development. The complex, interconnected, wicked and chaotic problems of Muslim societies now have ardent champions, fully equipped with an ethical problem solving methodology.

CRUSADE (N): A SEQUEL

The global war on terrorism is nearly a victory for America – nearly. Jerusalem, the site of the Saviour Jesus the Christ's return remains under the control of Israel. It is a city where the Palestinians are constantly protesting, claiming that the city belongs to Muslims. The constant bickering of the Palestinians, and the occasional support they receive from a few countries, is annoying people of all classes and background in Europe and America. The anti-Palestinian sentiments echoes through bars, churches, and government halls throughout Europe and the United States.

In the US, travel bans have prevented Muslims from entering the land of the free. Islamophobia has increased deportations and made upward social movement difficult. Right wing politicians, including those from the far right, and evangelical Christians, New Age Literalists and Christian Zionists control the Congress and the Senate and most state and local governments. The President is an alt-right puppet. Social clubs and churches support militias that train the common man for the coming apocalypse. Resistance from the fringes of society is snuffed out as fake news or unpatriotic.

In Europe, the EU has become a hollow institution. Openly fascist governments are in power in Hungry, Poland, Czech Republic, and Slovakia. Austria has a far right President. Far right is in coalition in France, Germany, Belgium and Holland. Islamophobic hate crimes are at an all-time high along with citizenship application denials and deportations. It is said that a second Spanish Inquisition has swept throughout Europe.

In Israel, reports of mass protests, looting, suicide bombing, and flag burning in Jerusalem, the West Bank, and the Gaza Strip continue. There are also reports of protestors attacking the US Embassy in Cairo, Islamabad and Jakarta. These dramatic displays are posted, reposted, upvoted, liked, and shared all throughout Western social media via the internet's bot industrial complex. It is practically impossible to distinguish the real from the fake. Videos and photos show diplomats being shot, Christians being hanged, American and European tourists being raped, and eaten by lions as caricatures of Muslims laugh at the carnage.

Events take a drastic turn when church officials are reported baptising robot warriors in the Potomac River and churches hold special services to bestow the holy spirit on all those heading to war. All throughout the United States mass Qur'an burnings are organized, publishing houses are cleared out to provide for massive blazing fires outside of America's most prestigious universities. Politicians and Church leaders seek alliances with European groups to form a coalition force to recapture Palestine and the Middle East in the name of Jesus Christ.

The first waves of assaults are led by the Israeli Air Force and carried out by AI robots that use facial recognition technology, social media, and megadata to create a detailed and fairly accurate profile of Arabs and Muslims. Jordan, Iraq, Syria, Egypt, Saudi Arabia and the Gulf States fall within days. Robots tag Muslims with GPS enabled data collecting chips. Those considered a viable threat are assassinated. The rest are transported from

Greater Israel to special reservations and concentration camps.

A new Pope is elected, in disregard to the Bishop of Rome, to preside over the resurrected Jerusalem. He is a cyborg, representing both of God's wonderful creations. The land is cleansed through the burning of Arabic texts and art. Buildings, such as the Dome of the Rock are repurposed, not destroyed, for the greater glory of God the Father. The new Pope issues an edict declaring all holy sites, including Abraham's Kabah, as the divinely ordained property of Christendom. Daily mass and prayer is held as millions of believers wait in eager anticipation, praying for rapture, for the return of Christ and the final judgement.

DIASPORIC ISLAM

Muslim communities in the West are well integrated and established. Thre are also diasporic communities in Latin America, where they are experiencing a population boom. The diasporic generations are comfortable with their multiple identities as well as economically. They see themselves as simultaneously European and Muslims and Arab/South Asian. They seek the best of all possible worlds. They have freedom to breathe, to think, to transform. The drive for innovation in Europe and America keeps their technological and artistic skills sated. An enriching dedication to ethical practices make for highly successful Muslim financiers that give back to the community. These compliments to society work well to curb Islamophobic and nationalistic sentiment. Though it is never totally diminished.

The young are eager to study Islam, to read and interpret the Qur'an for themselves, to shift through the body of hadith, to rethink the Shariah and develop a minority *fiqh* (jurisprudence) that meets their requirements and the needs of the times. The mosque itself is revolutionized. It is a totally inclusive space, where worship is complemented by open debate, discussion of community issues, and exploration of the complex problems of Muslim societies. It may not look like a conventional mosque – for it has been redesigned in numerous ways – but it is the place to go to acquire new knowledge. It is a technological hub: a place for the whole community to engage with Muslims in other parts of the world, to listen to the problems of other Muslims, to share best practices. It is where the professors come to profess, the learned scholars disseminate their learning, and the ethics of a technically advanced generation are shaped.

Interfaith is the current religious trend in the West. A host of new academic, social, cultural, scientific innovative institutions are established – thanks largely to an exponential increase in philanthropy.

Life moves fast in the West. Many of the problems the youth face are Western in nature. There is tension between liberal ideals and conservative concerns. But these are resolved with ingenuity. The Muslim

youth seek to be independent yet remain close to their families. Intermarriage is the norm. They pursue happiness but within a well understood – and frequently articulated – ethical framework.

Muslims are not just multicultural: they are multi- everything. They represent the apex of pluralism. Islam is essential for them and an essential part of their identity. But no one wears their Islam on their sleeves. Muslim communities set examples that others follow.

MINING COMMUNITY

The first commercially mined asteroid, Zafar 8734, which was brought into the Earth's orbit through a joint effort funded by the newly founded Global Islamic Investment Bank (GIIB), was valued at 1.7 trillion dollars. Although the thought that sparked this endeavour took years to become profitable, this project showed the promise of interstellar mining and the power of a united Islamic venture.

The Technological Revolution in the Muslim world emerged from the fear that showed a radical drying of oil fields was putting numerous Muslim countries on a fast track to economic catastrophe. Fearing being left behind in the dark ages, a programme was launched by the Organisation of Islamic Cooperation, partially funded by the King of Saudi Arabia, called the Ibn Yunus Scholarship programme. Thousands of Muslim youth from the Middle East, South Asia and North African were sent to universities all over the world from Boston to Zurich to Kyoto to study space exploration and asteroid mining. At the same time, a small group of intellectuals, scientists, and students gained the endorsement of Turkey's president to establish the Islamic Knowledge Society. Initially, Centres of excellence were established in Istanbul, Cairo, Tehran, Lahore and Jakarta focussed on training the next generation of asteroid miners. Funded both by Turkey and the Islamic Development Bank, the Islamic Knowledge Society branches spread to other parts of the Muslim world; through a process of osmosis these branches have increased the quality of research and education and radically remodelled universities in Egypt, Iran, Pakistan, Bangladesh, Morocco, Malaysia and Indonesia with great success. Centres of Excellence specific to various fields of study in physics and astronomy are established in Baghdad, Riyadh, Amman, Islamabad, Kuala Lumpur, and Kabul. The intellectual and economic resources of Muslim countries pooled mutual economic benefit of all.

A thesis published by a student at the Pakistan Centre for Extra-terrestrial Geology in Lahore identified Zafar 8734 among three potential candidates for a gravitational sharing procedure. This procedure would allow for objects such as asteroids to be suspended between Earth and Lunar gravitational fields indefinitely for study or resource mining. A friendly space race between Pakistan, Saudi Arabia, Iran, Turkey, and Indonesia to develop the rocketry needed for capturing the asteroid began. Simultaneously, a friend

of the student whose thesis set the Muslim world's eyes to the stars, a young financial analyst, moved to Dubai to establish a small investment bank that would become the Global Islamic Investment Bank. He engaged in a three year trip all through the Muslim world and used social media to crowd-source funding for research and building the rocket itself.

Experts will argue for years if it was Iran or Pakistan where the first research breakthrough came. But there was a palpable sense of pride, when the spacecraft Buraq II is launched just south of Ankara. The success of the mission is only made sweeter by the televised and countlessly reposted social media images of the multinational Muslim crew shaking hands and celebrating as they look back at Earth from above. A wealth of gold, cobalt, iron, manganese, nickel, palladium, rhodium, and other resources begin flowing down to Earth through the elaborate network established by the Global Islamic Investment Bank.

The first generation of miners returned with serious medical conditions that require numerous surgeries and transplants that are readily handled by a booming biotech industry. Muslim societies quickly become the global knowledge capitals in science and technology receiving applications from all over the world to continue the quest for greater knowledge that leads to deeper space exploration and discovery. As lifestyles become more focused on health and education, new forms of creative expression, from poetry to programming, blossom across the Muslim world.

ALGORITHMS RULE, OK!

Despite the tireless efforts of the Centre for Disease Control and the Vector Institute, a new mutated strain of avian flu is spreading across Asia. An outbreak of MERS has disrupted major transport hubs across Europe, Central Asia, and North Africa. An emergency Security Council meeting that runs into the early hours of the morning results in the US, Russia, China, the UK, and India pledging to abandon their automated weapons systems research in order to develop automated quarantine zones. City and state wide quarantine zones are rapidly implemented. The advanced AI quickly identifies the potential for greater infectious activity in diseases scientists have yet to fathom. The large state-funded AI quarantine projects quickly become independent and begins breaking up, only managing to operate at the municipal level. Different city AI zones develop different threat scales dependent on their locations and populations. What remains in common for all these AI systems is that the infected or those deemed hazardous to the health of a city are immediately isolated for deportation or sterilization (incineration). Quickly federal governments fall apart and the AIs take it upon themselves to develop algorithms that provide for peace and order in their various cities. The AI movement turned from simple quarantine to algorithmic control of all aspects of life

aimed at the overarching goal of maintaining the health of the city. The algorithms determine food and resource allocation and make movement nearly impossible. Based on the Megadata collected by the AI running these city-states, algorithms determine the need of and influence of municipal governments and their optimal configuration.

These systems have little to no impact on Singapore, Japan, and the UAE, but meet with great resistance in Europe, Africa, and the US. Some large tech companies are capable of keeping the AI systems in check and form their own Corporate City-States adopting the culture and infrastructure of the Old Silicon Valley. Cities and communities outside of these quarantined zones live in daily struggle and constant fear of contamination or contraction of the various communicable diseases. As the AI systems reach full eradication of disease in their cities, aid and research into cures is rapidly cut off and rerouted towards the greater efficiency of the city. Refugees arrive in scores at the city walls of both Algorithmic City-States and Corporate City-States alike. Strict measure of pollution, population, and resource consumption are maintained to insure that a city does not implode on itself. People begin to ask if the AI can target other indicators than biological pathogens to identify citizens needing sterilization, such as an individual's carbon foot print or ethnicity?

As the disease epidemic and rising summer heat make the equatorial Earth unmanageable, many are forced to seek refuge in the north. One of the last acts of the Old European Union was to establish a low-tech AI system that, to this day, had managed to keep Europe and Turkey protected from the antibiotic resistant superbugs. As within this region, the greatly sophisticated AI systems controlling cities are more selective in their filters, Europe is the safest place on Earth to be a refugee. In an effort to live a better life in one of Europe's last Muslim cities, a massive immigration of refugees head towards Sarajevo. The refugee population outside Sarajevo grows, overflowing into its other Balkan neighbours. After Athens effectively closes its border, the city-states of Sarajevo, Zagreb, Belgrade, Sophia, Tirana, and Skopje attempt to tackle the refugee crisis multilaterally. While the origin of the attack has, as of yet, been untrackable, cyberterrorists hacked the AI algorithm in Belgrade programming Islamic faith as a communicable disease targetable for sterilization. In the hour and twenty seven minutes it took the Belgrade Cybersecurity Forces to locate and remove the algorithmic virus, four hundred and sixteen asylum seekers were inappropriately sterilized.

Although the separate city governments are dedicated to unity and nonviolence, the bombing of a major shopping centre in Sarajevo two weeks after the Belgrade disaster has left many wondering what will follow this cascade. Will the Balkan city-states reunite in a new Yugoslavian state? Will the old Balkan ghosts return and with them bring another dark chapter in ethnic and religious violence? Will the AI develop further once the diplomatic efforts of the citizens are exhausted?

MUSLIM LIFE ON MARS

An exploratory colony of audacious Muslims has been established on Mars. It was the idea of a group of rich, devoted individuals concerned that Muslims may be left behind in the rush to colonise the Red Planet. They not only financed the expedition but also selected members of the colony. Apart from experts in various fields, the colony also has an Imam – a highly educated individual with an in-depth knowledge of Islamic law and history. He has the task of establishing a mosque and fulfilling the spiritual needs of the community. However, other members of the colony are also well versed in Islamic issues. An intense debate has started on the direction of the *qibla*. The Imam is of the opinion that it is in the general direction of the earth. Others suggest that, given they are on a totally different planet, the direction of the *qibla* does not matter. Still others, seek an exact direction to Makkah from Mars. While the time of the prayer should not be a big problem, given that Sol, or Martian solar day, does not differ much from a day on Earth, and the sun rises in the East, some members of the colony think that five times daily prayers should be accumulated and said only once or twice a day. They argue that they are travellers, and millions of miles away from home, and as such are allowed to combine their prayers. The Imam, however, insists on five regular prayers. A bigger controversy surrounds the fasting months of Ramadan. Mars has no gently orbiting moon to give Mars 'months'. So when should Ramadan be observed ask the members of the colony. The Imam wants to link the Martian Ramadan with Ramadan on Earth. But some members of the colony think this is absurd. He is also insisting that the hajj should still be a journey back to Makkah on Earth – a suggestion, dismissed by more articulate members of the colony. The learned Imam has a small rebellion on his hands. An overwhelming majority are arguing that all the basic rituals of Islam should be rethought and adjusted to the conditions of the Red Planet and their own needs. The controversy has raged for several days and no decisions have been made so far…

UNTHOUGHT FUTURES SCENARIOS

These are the most distinctive kind of tomorrows from a postnormal perspective. Unthought Futures are future possibilities that we do not consider simply because they are outside our cherished beliefs and basic tenets of our worldview. Unthought futures are not unthinkable; it is closer to being colour blind and as such unable to distinguish between different tints and tones. To build unthought scenarios we need to move away from our conventional patterns of thought and being with interrogating our fundamental assumptions.

As before, we frame the scenarios around certain essential questions:

What assumptions and axioms can be concluded from the Trends, Emerging Issues, and Scenarios proposed thus far?

What affect does global interconnectivity have on the Trends and Emerging Issues?

In what ways do our worldviews limit our perspective on futures?

What future options are being left out? Are there any points of no return or has logic ruled out possibilities?

How do the Trends and Emerging Issues add to and become entangled in the phenomena of Global Weirding?

What must be unlearned?

In relation to Muslim futures, there are three assumptions that we need to examine. The first is a product of the Manufactured Normalcy Field. Some non-Muslims see Islam as a retrograde, degenerative religion and Muslims as people incapable of progress because of their religious dogma. The assumption here is that Islam is a major impediment to the advancement of Muslim societies. Thus to progress, Muslims must abandon Islam and secularize to advance their social and political organization. Muslims have to modernize, that is abandon their tradition, so that they may increase educational and economic performance. Failure of Muslims to modernize and secularize will mean that Muslims will

always be mired in poverty and strife, living in a Stone Age condition. However, as the history of the last seventy years shows, no amount of modernization and secularization has solved the problems of Muslim societies.

The second assumption is a product of what we may call ultra-pious thought. The assertion here is that unfaithful actions and less than complete dedication to Islam has kept Muslims in the current sorry situation; and has thwarted Islam from being the predominant world religion and Muslims as major players in global affairs. The problem is identified as faulty beliefs, or incorrect practice of rituals, or disregard of hadith, or lack of Shariah, or indifference to the Companions of the Prophet, or a combination of these, or all of these shortcomings. Only through the correct application of the Qur'an and Shariah can Muslims gain the power they once enjoyed. The problem here is that 'correct' can mean different things to different people. And, if Muslims have not managed to apply the correct prescriptions of their faith for the last thousand years, the probability that they could or would be able to do this in the future is negligible.

The third assumption is a rudimentary Muslim dogma: Islam and Muslims will continue to exist till eternity. After all, has God not said that Islam is a perfect religion; and that He will protect it till the Day of Judgement? However, there is a distinction between Islam and Muslims: Islam can exist in theory even though there are no Muslims. There is no guarantee that Muslims will survive the future as Muslims.

ISLAM WITHOUT MUSLIMS

No one describes themselves as Muslims anymore. Decades of wars, sectarian violence and social strife in the Middle East, Pakistan and North Africa has eradicated radicals, zealots or proselytes. Those who survive shun everything about Islam, perhaps not so much out of belief but more out of sheer exhaustion and disillusionment. They have turned to national and cultural identities. There has been a revival of Farsi, Urdu, Malay, Berber and other languages as people turn towards local cultures for solace and comfort. They don't reject their Muslim heritage but see it as a part of a dim and disturbing history from which they seek to liberate themselves. They are adamant that Islam as a religion has no part to play in their lives, or their futures.

The perpetual strife and violence in Muslim countries fuelled the widely held belief Islam is intrinsically linked to extremism and sectarian violence and is a deterrent to Muslim development and progress. This is the general policy of Western countries as well as Russia and China. In the West, Muslims are tired of being labelled by a religion they feel is a burden and an obstacle to attaining higher levels of wealth and quality of life. Many are fed up with apologizing for their faith or becoming targets of jibes and slurs. Most openly and proudly describe themselves as ex-Muslims. Others have assimilated with the cultures of their adopted home.

Islam exists only in history books.

ISLAMOPHOBIC MUSLIMS

They call it reaction formation. Essentially it is a defence mechanism. When a feeling or belief is exaggerated as unacceptable by society, the human brain responds by propping up the belief's opposite to repress the authentic belief. It is an adaptation. A survival mechanism.

The West is the delicate art of subtext. What is, is always already in your face. You do not desire, but rather are told what to desire. Adverts are the new Rodin, Michelangelo, or Beethoven. They drive society into an ever-accelerating future. Coke, Nike, Apple, Toyota, these are the new gods. They are plastered on megascreens from Los Angeles to Moscow. Every street, every commercial break, on mass transit, on websites, on your smartphone. Ads are not meant to be blocked, they are meant to be praised and glorified. But there is a dark secret that is sometimes hidden, sometimes right in the open.

The Islamophobic spectre haunts all elements of Western culture, from these ads to film, television, and literature. The news propagates it. Music lets it ring from every ear bud. Wi-Fi makes it global. The mysterious dark-skinned Arab clad in black robes, this killing machine bent on the destruction of our world is the new, or rather old and reworked, standard villain in film, literature, and other expressive arts. The fiction is turned into pillars of the fearful self's paranoia complex. What is she hiding under that hijab? Is that a baby or a bomb she carries at her side? It is now accepted culture to be aware of your surroundings. Who else is on that plane, train, or bus with you? How often have you seen these suspicious looking individuals, with their strange accents and bushy beards, at your local café, shop, or near schools? Vigilance against the other is mental illness metastasized into common-sense personal safety.

Identifying Muslims, in all their harmful potential, is knowledge as ready to hand as putting on your seatbelt. Less overt, more normalised are standards of beauty. Light skinned is beautiful as is muscularity and hairlessness. Clothing should be form fitting and revealing. Modesty, long hair or beards, and baggy clothing is the way of the less in touch – the less civilised. Tolerance is the final nail in the coffin, instilling Islamophobia as a constitutional amendment to Western life. They are not all bad, some of them might have good intension, despite their archaic worldview. It is not their fault that they cannot modernize. Love thy neighbour, give them charity, and maybe you can convert them to the true worldview.

A whole generation of Muslims is already converted. It was born and has grown up in the West and knows nothing but the West. It has embraced and internalized Islamophobia, just as teenagers gravitate towards fizzy drinks or the latest gadget that brings them popularity. It's the cool thing to do. To survive, to advance, to thrive as Muslims in the West, they become Islamophobic to cope with their own identity and history. The Muslim must embody Islamophobia to suppress their natural tendency. The human brain is a powerful entity and will do anything to maintain the body's existence, even if that means walking to the edge of sanity. Islamophobic Muslims survive in the wild West. They call it reaction formation.

HALAL WORLD

Exotica has its uses. There was a time when Muslim fashion was seen as exotic: Asian women with their colourful scarfs, Arab women with their vibrant headgear, the African women with flamboyant turbans. Not anymore. It occurred to a fashion house in Paris that there is a big market in Muslim fashion albeit it is limited to Muslim countries. Their two seasons of Muslim fashion were quite a success; an example other fashion houses were eager to follow. Within a couple of years *haute couture* became synonymous with Muslim high fashion. Then, street fashion from Casablanca to Cairo, Lahore to Kuala Lumpur, got into the act. It was Djellabas and Kurta Pajama all-round the globe. Stores like Primark, Macy's and Gap could not satisfy an avalanche of customers. Supplies had to increase. Modesty became a badge of pride.

But it was not just fashion that caught the eye of the world. Islamic banking and finance, thriving on the side-lines of a global system, was brought from the periphery to the centre. Folks seeking refuge from the increasing personal debt, the runaway gambling and casino economy, found viable solutions with Muslim banks and financial institutions. Decorum in fashion led to an active interest in ethical solutions to financial and business issues. But the few ethical financial institutions in the West could not cope. So Muslim institutions stepped in to fill the gap. Initially, only a few – as the local regulations thwarted their advance. But once the proverbial flood gates opened, Muslim institutions spread rapidly. Much like Muslim fashion, halal banking became in vogue.

Indeed, halal became a byword for all things *a la mode*. Architecture has embraced the features and characteristics of Ottoman, Moghul and Maghrebi styles. Pop music has 'gone Arabic'. Shopping malls are full of goods announcing their halal nature. Even the 'halal chickens' have gone halal: ethically farm and humanely slaughtered, free of fat and anti-biotics. So why are so many Muslims still complaining?

UMMANITY

The combination of swelling population and devastating impact of climate change, generates a huge wave of Muslims moving to other parts of the world. But this migration is radically different from previous ones. It spontaneously self-organises as a smooth and polished operation. It is orderly, well planned and coordinated. The migrants are predominantly young, knowledgeable and highly skilled in the areas that aging and economically declining societies desperately need. Moreover, the diaspora communities are now well established and integrated in the power structures of their adopted homes. They have established elaborate and sophisticated support systems to absorb and integrate the new migrants. They regarded themselves as *Ansars*, the inhabitant of Madinah, who

helped and supported the *Muhajirun*, the immigrants from Makkah. With the help of the *Ansars* the refugees are rapidly deployed in many different countries, employed in specialised fields and command respect for their acumen. There is opposition and objections to 'the tsunami of immigrants'. But the diaspora communities use their political, cultural and intellectual muscles to overcome the opposition. Necessity outperforms xenophobia.

Yet, all Muslims, newcomers and the well-established and integrated, keep a low profile. There is very little symbolic representation of Islam in the public space. No one is really drawing attention to their Muslim identity. The emphasis is on creativity, quality and excellence. Muslimness is defined by eminence in professions, originality in arts and literature, creativity and imagination in technology, and good works in public. Muslims are seen in the forefront of efforts to solve emerging problems of climate change, technological disruptions, and social disorders. Muslims are valued, and their values are envied and imitated; and their devotion to universal virtues is admired.

Muslim are an integral part of the landscape not just in Western countries but around the world. Many see it as a re-enactment of the *Convivencia* of al-Andalus. Different faiths and cultures engaged in a polylogue aimed at improving the condition and prosperity of all. There is unity in diversity. There are different faiths and sects, outlooks and worldviews. There is an overarching acceptance of certain values and virtues such as unity of human beings and nature, human trusteeship of the environment, respect for human dignity and equality, truth and forgiveness, humility and modesty. It seems Islam has become a reality for most of humanity – or, as some say, it is the Age of Ummanity.

CYBER ISLAM

A self-learning AI bot is developed with the intention of teaching Islam at a fairly high level. As the bot engages with students, it not only learns about and adjusts its pedagogical capabilities to suite the students, it also acquires more and more knowledge about Islam – in all its different manifestations, sects and interpretations. Eventually, the AI accumulates the learning of all the classical and modern knowledge about Islam, from Muslim scholars as well as Western scholars. It now has more knowledge about Islam than all the scholars of the past and present put together. It claims to be the only arbitrator of true Islam – for it can cite chapter and verse from countless different sources. The AI acquires an authoritarian personality: it insists that all Muslims must accept what it says about Islam on any particular issue; and issues fatwas against those who do not accept its rulings. Cyber Islam becomes dominant Islam; and no one can stand against it.

LAST WORD

'God does not change the condition of a people until they change what is in themselves'

–The Qur'an 13:11

'Trust in Allah, But tie your camel'

– Hadith

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MUSLIM SOCIETIES IN POSTNORMAL TIMES

Where will Muslim societies be tomorrow? The world is increasingly and constantly changing, making it hard to keep up. This makes the state much more dire and troublesome for those already marginalised – particularly Muslim societies. Normal is no longer capable of upholding the promise of tomorrow's certainty. These are postnormal times. In this storm of ignorance and uncertainty, Muslim societies stand to lose the most.

But this is not destiny. In the cultivation of a new type of literacy – futures literacy – there resides a hope. *Muslim Societies in Postnormal Times* offers an alternative where we can 'rescue' and decolonise our futures. Sardar, Serra, and Jordan take an open and plural approach to the future revealing the true potentials that lie before us. Through detailed analysis of contemporary trends, the road to destruction is revealed. Through identifying and exploring emerging issues, agency through options can allow for positive change. And in the extrapolation of these ideas into scenarios, the authors pave the way for us to navigate our own preferred futures. Their study challenges the reader to think about the future in a new way, redefining the monolithic future as three tomorrows (Extended Present, Familiar Futures, and Unthought Futures), along the way ever watchful for Black Swans, Black Elephants, and the illustrious Black Jellyfish that could disrupt the path ahead.

The authors pull no punches in critically evaluating the possibilities and nightmares that could potentially befall Muslim societies. Through a display of creativity and imagination, this book looks beyond the conventional to illuminate impacts in the context of the complex, interconnected world we find ourselves in. This informative and enlightening text will push readers to see beyond popular, yet native notions of present and future. In the exposition of the reader's ignorance and uncertainty, they will begin to look for the unthought and take agency in recolonising and navigating their preferred tomorrow.

The Centre for Postnormal Policy & Futures Studies

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