2

Physical Dimension of Technology

2.1 Introduction

The world seems to be the provisioner of "content" for our social media reports. Without the individuals being aware of it, Facebook and Twitter have made their users view the world as containing lots of raw material to be delivered through means of various Facebook status updates and tweets.

While the Facebook prompt asks an individual "What's in your mind?" the Twitter prompt asks you "What's happening?" Needless to say, these two are subtly different. While Twitter asks you to act as a kind of news reporter of various sorts Facebook asks you to report on your inner mental states (What are you angry about? What are you sad about? What's in your mind this morning?). Yet, Twitter and Facebook prompts are identical if you consider that what is "happening" could very well be mental events rather than what is "happening outside." Between "what's in your mind"—what is inside there?—and "what's happening"—what's out there?—we seem to have all bases covered. There is no explicit collaboration between Facebook and Twitter, yet if these firms were partners then these prompts would collectively ensure a reasonably comprehensive elicitation of mental states and empirical reports.

Facebook users can "love" a post; they can be "angry" at what it talks about; they can be astonished and say "wow"; they can be "sad" and make a face dripping with tears; they can find it funny and laugh out loud "ha-ha." Now, a user does not just "like" a post; he can "react" to it. These, and others, are the templates that Facebook provides users for their reporting "work"; these are the ontological categories with which users are sent forth into the world to report back on what they see and hear and taste and feel. They make the world for users; they bid users look at the world with their lenses.

Those who are aware of the allure of Facebook "likes" would describe this pseudo-pleasure as hollow as they are seductive. The term "attention

economy," which refers to the evolution of the Web grounded on the demands of the advertising economy, has become a buzzword among Silicon Valley entrepreneurs.

Often times, despite the best intentions of individuals to develop tools, these may have negative consequences which were unintended at the beginning. In a similar vein, technology may result in making the users become addicted and pay only partial attention by constraining individual ability to focus to a great extent, which may eventually result in a lower IQ. According to one recent study, cognitive capacity may severely be damaged by the mere presence of smartphones even when the device is turned off.

When Facebook developed a path of least resistance by means of a single click in order to make some bytes of positivity flow across its platform, its "like" feature has been very successful. While Facebook users were enjoying the short-term boost they received due to their social affirmation, Facebook itself gathered valuable data with regard to its users' preferences which would become a great product to be sold to the advertisers. Soon, the same idea would be implemented by Twitter, with a slight difference of the heart-shaped "likes" and other websites and apps such as Instagram.

Facebook is constructing a map of the collective mind: at what time during the day did a user enter which status in response to which prompt; what online or offline event did it follow; what succeeded it; where was the user when he did so; what was he doing. Users are prompted to assist in the construction of this map, and they are complying. They are being interrogated; and they are complying. They are conditioned to do so; their responses are reflexive. In realistic art, they sought to capture the world as it was. In Facebook and Twitter art, individuals capture the world as expressed in status report and tweet.

These forms of social media work have granted users an incentive scheme of sorts. They can pour out the most "inconsequential" thought that flits across their mind and see whether their friends will "like" it or "react" to it or "pass it on" with stamped approval by retreating it.

Through this scheme, individuals have been provided a means by which they may seek confirmation whether there is any "value" to the constant stream of observations – all those thoughts and sensations – that pass through their minds. Also, this never-ending stream of data enables a great deal more than just friendly interactions among friends and family; every photo uploaded to Facebook and Instagram is harvested by bots and finds its way to the data banks of the NSA and the FBI and the CIA, there to be processed and

used as learning data for face recognition software used to track criminals, or terrorists.

As individuals are being "asked," by social media, to make their interiority external, they seem to be happy to do so. There was a time when individuals needed to write the novel, with its richly imagined interior mental spaces, to enable this kind of inspection; then came psychoanalysis with its couch and undirected free association. Now Facebook's status feed and user timeline offers access to those reports, all made available voluntarily. Individuals log in, lie on their virtual couches, and chatter away.

Of course, while individuals rush to social media to tell the world what they saw, they often only tell the world what they saw if they think they will get enough positive feedback from it. Social media users see the activity on their friends' pages, how they attract admirers and compliments, and they crave the same. Everyone wants applause, cheers, and acknowledgments, and for that, they need the right "material," which the world and their friends provide. Social media users in general are popularity seekers, of the kind provided by their "friends" and "followers." There is a hierarchy of likes: the positive comment is still better than the like, and even better than the "love" emoji; the re-tweet is infinitely preferable to the "like." Users still prefer explicit communication to the terseness of the icon. By witnessing their friends' reactions to their own posts they realize which sentiments are safe to express, and which ones are not. They mold themselves according to the demands of their social media network.

Social media users seem to pay closer attention to the world as status and tweet composers; what their "friends" show them may reveal aspects of the world they had not noticed before. A map of the emotions, of the various affects and experiences, of the various changes in psychological dispositions during the day, is drawn for them; they are invited to aid in its preparation, to inspect it and comment on it. They feel compelled to provide their own maps in exchange. Yet, maps alter the world individuals see; they make them see a world in a very particular way; they are infected with selection biases all of their own. If reality is socially constructed, the Facebook status and the tweet are its new dimensions, its new axes of interaction and action. They offer users a perspective and a lens through which to view this world; they tell them what is to be condemned – that which gets the most "angry" reactions; what is funny; what is to be approved, which gets the most "shares," the most "likes," the most "RTs."

Social media users who report on their feelings or their observations are not merely hankering for approval; those two spaces now suggest themselves

as precisely the places where such reports should be made. That is not just because they often do so; it is because they see others do the same thing, all the time, everywhere. A social media status is an act of social participation, an interaction with the world. If Socrates was right that "the unexamined life is not worth living," human beings seem to be in an era where the unpublicized act is not worth doing; or worse, did not happen at all. If something happens in the world and no one responds to it on Facebook or Twitter, did it really happen?

Now, individuals see the world differently, made up of check-in locations, of situations which need responses to. When they look at the world, they mostly see it through a social media filter: Is there anything here they could draw upon and use? What in this situation is amenable to formulation as Facebook status or tweet? They are overcome by the urge to report, to translate this "reality" into status or tweet. "Reality" is at its most disappointing when it does not present material suitable for usage in a status or tweet.

When an individual writes a Facebook status about an event – as opposed to writing a blog post about it – he shrinks the event into manageable form; he reduces its complexity, its many facets, and dimensions. Some users may write posts that are hundreds of words long on Facebook; the majority write short reports and one-liners. Many Twitter poets spend considerable time polishing their 140-character (which has just been extended to 280-character at the time of writing this book) tweets into a distillable aphorism. The picture of the world that emerges is of one that is capable of being captured so. The world is now the world as witnessed in social media, described and annotated in a very particular way, fitted into particular formats – those made available by the social media tools being used.

Within the realm of social media, most part of the communication, which may have been classified as being private in the past, has now become available to public spaces due to the feature of "sharing" among one's friends in various social media channels. There is a delicate line between privacy and social isolation which may run counter to our human nature. Real happiness occurs when there is conformity to the nature of human beings; on the other hand, this idea of conformity may sound provocative given the individual autonomy to a radical extent.

According to the social media scholar Peggy, the "exhibitionist culture" emerges as privacy keeps serving this isolation of the individual. Given this culture, we continue to get informed on things about each other that we have no right to know or that we should not know. Although technology may contribute to this phenomenon, the loss of personal privacy may also play

a role in this. Due to this loss of privacy, the distinctiveness of the souls of human beings is also lost, which may eventually result in the deterioration of the civil society as well as its institutions.

Of course, this shall not mean that all privacy is bad. Without privacy, we cannot have our required solitude at certain times. For instance, solitude provides the individual with the opportunity to withdraw from the chaos of everyday life into a quiet place for prayer. Such moments enable one to re-evaluate oneself and to establish a balance for meeting the personal and professional demands of life. Within this regard, solitude contributes to a meaningful involvement in the broader society.

Given the current architecture of social networking technologies, behavior which may violate traditional privacy norms may be induced upon social media users. To give a specific example, Facebook's default settings allow information exposure to a maximum degree and for changing them, the user needs to go through a complicated opt-out process. This has been indeed the intention of its designers as new social norms are facilitated to share information so that in the end the modern networker becomes not much concerned about privacy issues as previous generations did.

Facebook's Wall would be a good example for its privacy-damaging architecture. Since the launch of Facebook, its Wall existed and users could become aware of how its privacy norms were revised. From its inception onward, Facebook encouraged its users to write on each other's wall which was quite different from sending a message. A message on the Wall acts as a kind of public message as the content can be seen by everyone. In a short period of time, a pattern emerged among the Wall messages as what was once written in email messages including planning dates, discussion of medical test results, etc., was now being written on Walls. In a similar vein, the comments spaces of Facebook posts provide an opportunity for communication which might have been restricted previously to email messages. Despite some revisions in Facebook's policies with regard to the user concerns on its security architecture, Facebook's default settings for information-sharing keep changing our collective understanding of privacy in social spaces (See Appendix B for a detailed discussion on this topic).

Needless to say, Facebook could easily defend itself against the charges of user privacy violations as the users themselves chose to walk into the trap set by Facebook.

In the past, the Internet has been conceptualized as a means for decentralized ownership and control. In comparison to the possession of natural resources, the ownership of technology and skills may be even more important when it comes to the establishment of knowledge economies.

Given the link between intellectual property and productivity, today's means of production have become knowledge, skills, and a capacity to fulfill the needs of others. One of the cornerstones of modern enterprise is the intellectual property as it is a crucial aspect of human creativity that may eventually result in economic prosperity to the benefit of all.

As the property rights are vital qua human rights on the national and international scale, the right to privacy is also crucial. To give a specific example, let's think how Google keeps all of its user data to more than 50 million users per day. Users "google" various things, get involved in online discussions, send emails, and make use of a host of various other services. Given this vast amount of information, how much of our own privacy can we forego for the sake of receiving better services?

There is something undignified and sordid about the whole business: this massive machinery of communication, with its complex software and hardware and intangible protocols, is dedicated to selling users goods. Individuals rarely remember that their communications with family and friends, their passionate and informed political discussions, are merely there to inform advertisers of user preferences. Something important happens on social media – users are, after all, communicating with each other – but they realize too, that we are being used. A social network is a good thing; one used for advertising, controlled by a corporation, and used to spy and surveil users, is not.

No positive theory can be easily offered here; no suggestion of an alternative system can be made. Yet, individuals should be aware of what is happening to them, and how they are changing. That sensitivity, at least, should help them navigate these new, uncharted waters of communications and relationships, and ultimately how they see the world, and themselves in it.

Individuals should, above all, realize that they are being trained. Nowadays, there is a quite often mention of "machine learning," of how "training" the machines with large data sets can make them become smarter, better thinkers, more adept at solving problems. Yet, human beings do not seem to consider that the machines and interfaces they interact with are training themselves indeed. Modes of communication force personal communiques into the formats they require and permit; individuals are learning to express themselves in Facebook statuses and tweets. They are becoming different beings as their relationship with our informational environment is changing.

As mentioned earlier, exhibitionism and individualism within our contemporary culture results in a self-imposed slavery. In order to establish a true humane society and a civic life, a right sense of privacy should be established

by putting all of our material wealth and technological prowess at the service of something greater than our own material success. Yet, often times this something greater is being confused with a greater, better thing, technology, or trend out there in the material world. Nowadays, this something greater seems to be the artificial intelligence (AI), which will be covered in more detail in the next section.

2.1.1 Thinking Machines

The notion of "thinking machines" and the field of AI lead to many interesting philosophical questions. Artificial Intelligence refers to the notion of developing computers that are able to think and perform tasks that normally require human intelligence. While AI arose as a possibility quite early in the history of computing, the concept of a machine that could mimic a human has a much longer history, going back hundreds of years to the idea of automatons. Modern debates on AI proceed on the presumption that we will remain static while machines continue to change and "take over us." Yet, as technologists, we shall not be waiting for the rapture of the geeks. Instead, our understanding of humanity, technology, and the future should be shaped by a knowledge of God who made us his stewards on Earth. As God, the Almighty, mentions in the Qur'an:

> *"And it is He (God) who has made you successors (khala'ifa) upon the earth and has raised some of you above others in degrees [of rank] that He may try you through what He has given you. Indeed, your Lord is swift in penalty; but indeed, He is Forgiving and Merciful." [6:165]*

In the end it is God who will one day make us return to Him, not in the virtual world of a computer, but in the Afterlife.

If the world we live in is one that our machines will be able to "take over," that world will be unrecognizable to us, because we will be unrecognizable to our present selves. Part of that transformation will come about because we will have been trained to think, read, and write differently by the machines; these machines and their technology, the systems, the rules and laws, and techniques that sustain them are constitutive aspects of ourselves and our societies; radical changes in them induce radical changes in us.

We are used to looking at older photos and exclaiming in surprise and wonder at how much we have changed; those photographs have never

captured the changes in our interiority. But a history of our social media interactions most certainly will; we might be surprised to see what we are becoming and have already become.

Even though we may easily feel God's creative intelligence when observing a beautiful natural surrounding such as a lake or a forest, we may never experience the same feeling when using an innovative technology or latest Smartphone. Why is this the case?

The answer lies partially in the fact that the mindset of the modern man has been used to contribute the successes of technological progress as approval of self-sufficiency and individual power as a result of the scientific materialist worldview. Despite the efforts of Islamic scholars in the past to establish the seedbed for the cultivation of scientific revolution in the West, by providing both a moral and an intellectual framework in order to investigate the created order, most of us are inclined to view modern technology and science somewhere between being spiritually irrelevant and atheistic as if they have no Islamic origins at all.

Given the fact that a mobile phone could contribute to the sustenance of the created order – in the form of maintaining or strengthening ties between friends and families, could we not re-conceptualize the cell phone as a pointer toward God? This may appear counterintuitive to most of us, yet there are various reasons to make such claims. Given the ubiquitous digital artifacts of our own time, these can be considered as reminders of the goodness of the Creator in the form of pointers toward not only His invisible power but also His care and provision for humankind.

Moreover, a more profound point should be raised with regard to God's glory as well. While we may be dazzled by the amazing harmony among the parts of a flying bird, we should be more inspired at the creativity necessary to create human beings with the intelligence to develop the Concorde. Although engineers can bridge great seas and scale huge mountains as modern craftsmen, only the Master Craftsman can create human beings who can achieve these goals.

If we can achieve a subtle shift of our perspective, we can start digital artifacts such as mobile phones and contact computers as being powerful pointers toward the Divine rather than being merely as physical objects devoid of any spiritual significance.

According to a recent survey in the field of AI, given the advanced state of this field, today's autonomous vehicles can resolve the challenging problem of off-road driving. When it comes to analyzing certain kinds of technical

images, (e.g., in medical applications), computers seem to do well or better than human beings.

Despite these notable examples, AI still faces many fundamental challenges. Even for simple narrowly defined tasks, AI still generally lags behind human abilities. It was also observed that AI capabilities often reach a plateau and that any incremental improvements typically require tremendous efforts and computing power. One area that presents particular challenges for AI is the area of common sense reasoning. A category of questions called "Winograd schemas" can be used to test such reasoning. An example is the following: "The man couldn't lift his son because he was so heavy. Who was heavy?" Statements like these simply require identifying who the pronoun "he" refers to, yet they rely on broader knowledge to infer that heavy items are more difficult to lift. Nevertheless, researchers remain busy trying to tackle problems. Could we ethically turn it off or destroy it, saying it is simply a computer and therefore we can do what we wish with it? What role does humility play in considering such a technical marvel – or perhaps monstrosity? Does humility say humans should never dare to develop such devices?

Moreover, the growing complexity of AI software presents numerous challenges, especially when it is used to control automobiles, surgical robots, and weapon systems. It is a particular challenge to verify systems that rely on "machine learning" techniques. Apart from the risk potential of weapons of mass destruction, there is the risk potential of destructiveness of knowledge-enabled mass destruction (KMD), as they can be amplified to a great extent by the power of self-replication. According to a BBC interview with Stephen Hawking, such a development of a complete version of AI could bring the human race to an end. Similarly, the engineer and entrepreneur Elon Musk asserts that human beings should treat AI very carefully as it may pose the biggest threat to their existence.

The Internet has helped entrepreneurs slim down the scope of their firms, instead facilitating peer-to-peer connections or commerce. When a business like online retailer Amazon operates with a deep commitment to all of its customers, enormous opportunities are created. Netflix, the popular video streaming service, is a significant business customer of Amazon Web Services, the cloud computing platform powering the e-commerce giant and available as a service to startups and Fortune 500 corporations alike.

The speed of communication has aided growth but the most successful marketplace businesses have developed ways of signaling the reputation and integrity of buyers and sellers. After an Uber ride, the driver and passenger

both rate each other with consequences for their future access to the network and service. Similarly, AirBNB and other vacation property rental marketplaces encourage the host and guest to both provide feedback on their stay. New businesses are providing transparency and aggregating reputation so customers and producers can make better decisions (e.g., TripAdvisor, Yelp, Angie's List). This is both transactional (Where should I stay on my trip?) but also character forming (How can our team better serve others?). Third parties are also building on top of this reputational ecosystem. For example, the lender OnDeck Capital has incorporated Yelp reviews and similar data when underwriting loans for small businesses.

The business model for many services relies on revenue from targeted advertisements that require attracting as many eyeballs as possible and keeping them coming back. These nudges have become increasingly sophisticated, with some social media companies hiring behavioral scientists to help advise developers on tuning apps so they play on a user's dopamine levels.

Jeffrey Hammerbacher, an early social media pioneer, once lamented in an interview with Businessweek magazine, "The best minds of my generation are thinking about how to make people click ads." Some companies have recently been formed to provide technical solutions to the distractions that arise from digital technology. Flipd is a software company that has created an app to help people spend less time on their phones and remove distractions. The app has been adopted in universities to monitor students' smartphones and encourage them to remain focused during classes and lectures. Another program called SelfControl helps users block distracting websites while working on their computers. While technical solutions can provide helpful aids, the problem is not just with our time and our eyeballs – it gets to our hearts. For many our screens are continually with us – when we rise up, when we lie down, and when we walk along the way.

Human beings can utilize their capacities for good or evil which is also true of their capacity to develop tools or technologies which can be directed toward noble or unworthy ends. Ultimately, it is up to the developer of these tools or technologies whether he puts his creativity, freedom, and intelligence for devising a tool or technology toward evilness or goodness. An in-depth understanding of the potential of technology to be utilized toward good or evil should be in fact one of the main concerns of the innovators of the future. Could a religious Bill Gates or Mark Zuckerberg develop a new trajectory for a humanitarian innovation in the field of technology? Is there a way for articulating one's technological innovation with a spiritual depth and faith dimension while standing at the forefront of new technologies which shape

the human life in profound ways? Can new technologies such as quantum computing, organ printing or robotics and augmented reality be utilized to alleviate human suffering? How can mosques utilize Google Glass or similar other tools of augmented reality creatively in order to deepen the human worship or to provide training to outsiders on the Qur'an and Islam on major topics such as doing the pilgrimage or paying zakat to create a greater inter-religious understanding? The new generation of Muslim technologists should ponder these questions and many others that cannot even be anticipated now.

Although it was Hitler and his henchmen who unleashed death and destruction during the World War II, someone had to design the railways, factories, warehouses, and machinery for their war effort. An article in the *New Atlantis* titled "The Architecture of Evil" includes the provocative statement that the furnaces of the Nazi death camps have been designed by some individuals. The article goes on to describe the life and work of Albert Speer, Adolf Hitler's "chief architect," reminding us that Hitler did not work alone. The truth is that engineers and architects designed the technology that enabled the Nazi brutality. Speer later wrote that his obsession with output statistics and production made all feelings of humanity and considerations blurry.

"The Architecture of Evil" not only tells the story of Albert Speer, but goes on to suggest that in order for today's engineer students to mature as responsible citizens who can go the extra mile beyond the immediate needs of their technical work, their education should focus on both the liberal arts and analytical skills. Our computer science and engineering schools need to attend to ethics and values if we hope to build a just society.

I would add that Muslim engineers must see their technical work as a response to God, one in which even our mathematical models, computer programs, and architecture need to enhance justice and show mercy as we walk on the straight path to our Creator.

While Speer's situation seems like a dramatic example, the truth is that all engineering work involves some moral choices and responsibility. Even programmers writing logical, mathematical code need to recognize that their creations are not neutral and unbiased. Cathy O'Neil worked as a math professor until 2007 when a lucrative opportunity arose to use her Ph.D. in mathematics at a hedge fund. Shortly thereafter, the financial crisis occurred and O'Neil found herself pondering her work and her role as a "quantitative analyst" (or what is often referred to as a "quant") in the finance industry. Reflecting on this, she later asserted how the collapse of major financial institutions, the housing crisis, and the rise of unemployment are also within

the responsibilities of mathematicians who were trying to wield magic formulas. Her disillusionment led her to participate in the "occupy Wall Street" movement and eventually write her phenomenal book "*Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy.*"

In her excellent work, "Weapons of Math Destruction," Cathy O'Neil provides details on why algorithms should not be considered as being neutral and how they reproduce human biases and agendas. We cannot build a neutral platform, every decision matters, including the decision to collect certain types of data and not others. Our collection, analysis, and use of data may even be informed by particular ideological and political agendas.

Programming is not a detail that can be left to "technicians" under the false pretense that their choices will be "scientifically neutral." Societies are too complex: algorithms are political. So how much time do those with technological power spend on exploring the ethics of what we do?

The inner working of these systems is often opaque, and the verdicts are accepted without question. Often, the inner assumptions and values embedded in the math are hidden over concerns of intellectual property and trade secrets. This leaves those affected without any explanation or recourse for unfair decisions which may impact them.

Cathy O'Neil suggests that tech giants are solving problems not relevant to the everyday person and that possibly sensitivity training might help. I feel that something like this would not be enough. No one would argue if some elements of humanity or ethics would be infused into computer science curricula. Even human-centered design does not go far enough. Based on my doctorate research experience, I can suggest that designers of technology consider more "empathetic and participatory design" where there is some degree of involving people who are not in the technology company as autonomous persons in product design decisions, and not just using them as research/testing subjects. So, perhaps, we should design, fund, and celebrate more programs that promote humanity and social justice rather than technical abilities. We should not be targeting creating more factory workers. We should be working on the values of factory owners and managers.

There is little direction of working with software engineers and programmers to help them think in more humane and ethical ways about what they're designing, to be more critical and aware of the underlying politics of what they do. Non-programmers can become more critical citizens when they understand how their (digital) lives are influenced by algorithms, but more importantly, shouldn't we care about the critical citizenship of the programmers? After all, it is highly unlikely that an amateur coder will be

asked to design the next big neural network: as unlikely as someone with a casual interest in medicine, or who studied holistic medicine, being called on to perform life-threatening surgery. While there has not been enough focus on how to make young individuals appreciate the social consequences of their algorithms and code, we also could not go beyond the rather utopian and naïve ideal that if one can grasp the meaning of an algorithm and learn how to develop one, then he can shape the computer code rather than it shaping himself. In order to understand the real social power of algorithms, different kinds of knowledge are required.

Technology is not neutral. Even equations and computer algorithms, which may initially appear cold and neutral, reflect the values and assumptions of the people and organizations that construct them. "Big data" sifts through vast oceans of data to find patterns that are then used to inform decisions in areas as diverse as finance, banking, hiring, marketing, policing, education, and politics. While mathematical models allow decision-making to be more efficient, they can sometimes hurt the poor, target predatory ads, and discriminate against minorities while serving to make the rich richer.

For example, should data like ZIP codes act as a proxy for creditworthiness, for hiring decisions, or for dating matches? It's not hard to imagine how such decisions could perpetuate a cycle of poverty. Should the data taken from current employee profiles be used to guide future hiring decisions? Such a decision could perpetuate biases reducing diversity in the workplace. Some of the consequences resulting from data and mathematical models are unintentional, but in the words of O'Neil, these mathematical models are "opinions embedded in mathematics."

The Chinese government is developing a new algorithm that will allow them to rank their citizens on a so-called "Social Credit System." The goal of the system is to judge the "trustworthiness" of each of the 1.3 billion residents, ranking citizens based on everything from paying bills on time to consumer purchases to interpersonal relationships.

Not only is this entirely intrusive, but it also serves to diminish a series of personal freedoms. As just one example, citizens will likely begin to self-censor their posts on social media given that a negative post about the government may result in a lower score and subsequent negative impacts.

The system also distorts the free market by changing consumer behavior. Rather than only investigating behavior, such a system shapes it. It "nudges" citizens away from purchases and behaviors the government does not like. If consumers do not have the full freedom and power to choose for themselves, society will continually to drift from following economic law. There will be

no supply and demand dictating the point of equilibrium. Demand will be artificial and prices will be arbitrary.

Such a system doesn't just reduce freedom, but it contorts the human person to fit a certain mold. It reduces the human person to an algorithm. Totalitarian systems understand people to be malleable and seek to engineer "the perfect citizen." The human person is seen as a hinge in the machine rather than a contributor to society. When producing a material object, imperfections are undesirable, but humans are not objects and therefore should not be treated as such. Algorithms cannot take into consideration context. The system does not know *why* you didn't pay your bills. It just knows that you didn't. It fails to see the citizen as a human person and instead sees him or her as a number.

The removal of these freedoms and the increasing treatment of human persons as objects isn't unique to China. All over the world there are governments and systems that are heavily involved in the business of monitoring and rating citizens and consumers. There has to be a line drawn between defending our freedoms and removing our freedoms.

One of the respected scholars of the 20th century, C. S. Lewis has served as a professor of Medieval and Renaissance literature at both Oxford and Cambridge Universities for almost 30 years. One reason why Prof Lewis has been doubtful about technological advancement was his idea that an omnicompetent state could utilize technology for the rise of its pervasive tyranny. According to Professor Lewis, although a welfare state may seem to be appealing to many due to the wide scope of human suffering existent around us, caution should still be taken about the purveyors of utopian dreams. Instead, Professor Lewis suggests that the good actions of individuals who strife for overcoming the challenges in a dark world should be promoted the art of living involves in dealing with the immediate evils as much as one can.

The fact is that all of life is religious and that even our technical and mathematical work has moral and ethical implications. Our big data algorithms and mathematical models can be directed in ways that are more obedient or less obedient to God's intents for his world. In fact, as more decisions are informed by number-crunching computers, we will need to make sure that justice and transparency are emphasized.

Pinocchio, Frankenstein, and Pygmalion, all of these, are examples of archetypal stories about distinguishing humans from artificial creatures. This theme is also explored in many science fiction shows and movies, such as the affable Commander Data in *Star Trek*, the replicants in *Blade Runner*, the cyborgs in *Battlestar Galactica*, and the robot boy in the movie *AI*.

God sent his Prophets rather than sending mere information or augmenting the reality with some new set of moral obligations. As the Qur'an says,

> *"Unto Him you all must return: this is, in truth, God's promise-for, behold, He creates [man] in the first instance, and then brings him forth anew to the end that He may reward with equity all who attain to faith and do righteous deeds; whereas for those who are bent on denying the truth there is in store a draught of burning despair and grievous suffering because of their persistent refusal to acknowledge the truth." Qur'an: (10:4)*

Technology that focuses on efficiency in terms of human interaction will not fail us in this world, but it also will make us less human.

According to the Qur'an, the God is relational in the sense that He was speaking to Moses and, ultimately, sending the last beloved Prophet Mohammed. While in other religions, such as Buddhism, nirvana or salvation or wisdom is obtained through information, Islam in addition encourages human beings to follow the examples as set in the Qur'an and by the Prophet Mohammed (s.a.w.w).

Being held morally responsible for an act implies freedom and choice, and AI programs simply follow a program. Thus, sin becomes evident in machines when humans develop and employ them in ways that go against God's intent for his creation. Those that hope AI will somehow enable us to surpass ourselves, producing an intelligent, yet sinless creature, are mistaken. Our redemption does not lie in our technology.

It is believed that the perfectibility of the man can be realized via the means of science, technology, politics, and education. Yet, the paradoxes of our modern civilization grow more and more catastrophic each year. The more the abundance grows, the more the resentment becomes while technological achievements seem to be more dedicated to the task of destruction. In addition to this, with the multiplication of the production, scarcities become paradoxically more endemic. Despite the high level of education of human beings in our century on average, even the mere idea of wisdom seems to have vanished from the world.

Modern society and modern man has only continued down that path at the expense of human freedom – all for the glory and fame of man.

These temporal achievements of science, technology, inventions, and the like also have a divine significance.

As AI and the subsequent technology continue to improve, we needn't be fearful of our own position and power. We are not mere machines, but creative and imaginative human persons fully capable of adapting, mobilizing, innovating our modes of service to be in line with his love and purposes.

The value of being a human is derived from their acts based on serving the Creator rather than as producing merely goods or becoming living machines.

In ancient times, celestial cycles may have dictated the ways of living. For example, according to this belief structure, fertility indicated Aphrodite's approval and lightning bolts were indicative of Zeus' anger.

While the Greeks described a good life as one lived in accordance with virtue, Muslims live under the commands of God's moral law. This is why Muslims pray five times a day in remembering the Creator or fast during the holy month of Ramadan as God's commands. Given the commands of the Creator for its creation in the Qur'an, human beings are re-oriented to develop specific living patterns. Given this dynamic relationship between the Creator and its creation, human beings can expand their horizons in arts and technology with the intention of having a better grasp of the Truth in God's world. Human beings were created not to become mere productivity machines, yet to develop meaningful relationships with both other human beings and their Creator. To ignore the Qur'an would result in an ignorance of the nature of man.

According to an article in the *Newsweek*, the drive to develop a real connection between human brains and machines may have mind-boggling consequences. The question that should be answered is not whether such a connection will have consequences or not, yet whether and how such consequences will improve the current situation of mankind.