Technology, Values, and the Shaping of Social Reality

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Technological change is inherent to human progress. Technology, by definition, serves to augment human capacities and in so doing alters the environment in which we act. In a very real way, social reality and technology co-evolve or are co-constructed. It could be said that the industrial and information revolutions have fundamentally transformed the functioning and conception of human society. Further, the relentless pace of technical and industrial advancement over the last century has redefined the relationship between human beings and the natural world. Technology is a dominant fashioner of reality, influencing social arrangements, goals, and assumptions in a way that profoundly affects collective development, individual behavior, and the ecosystems upon which we depend. Its multifarious impacts thus must be carefully scrutinized.

A major idea emanating from current academic discourse is that technology both shapes and is shaped by social, economic, political, and cultural forces. As one writer has put it, "A technology is not merely a system of machines with certain functions; rather it is an expression of a social world."[1] Automobiles and road networks, power and communications systems, and the Internet are not simply technical systems but also social processes shaped by social context. Technologies can empower us but may also embody or express existing relations of power and characteristics of culture, reinforce social inequities or pathologies, or manifest ideological or strategic goals.[2] Notably, technology, in the words of one thinker, has become "a powerful vector of the acquisitive spirit"; it expresses wants or desires—and sometimes feeds them.[3] Our technical choices define a social reality "within which the specific alternatives we think of as purposes, goals, uses, emerge."[4] Our identity and roles in contemporary society are strongly mediated by technology; it is something we create, but it also recreates or redefines us.

The Critical Issue of Technological Choice

Technical choices shape the contours of everyday life and give real definition to modernity. These choices take place at the level of societies as well as individuals. The variety of technologies we confront—and the uncertainty about how best to use them, if at all—is daunting. Further, when we consider complex technical systems that evolve at the macro level, such as the Internet, our ability to influence the overall development and deployment of these systems seems quite limited. Nevertheless, because complex technical systems and the specific components and innovations underpinning them are socially constructed, human volition and values define their purpose and impact. We

find, for example, that the intentions and values of a designer or of a corporation behind a product are embedded in ways that often are not obvious. So a simplistic notion that technology is a neutral means to freely chosen ends is not tenable. Technological advancement increasingly shapes the moral terrain on which we make decisions.[5]

For many decades, the subject of technology has been integral to public discourse concerning processes of social and economic development. Various objectives and descriptors have been used to define the appropriateness of technology in relation to development activity: small scale, labor intensive, advanced, intermediate, indigenous, energy efficient, environmentally sensitive.[6] Ultimately, the appropriateness of technology is determined by the values of those creating, using, or implementing it. The "appropriate technology" movement perhaps lost momentum to some degree because the role of values in guiding technological choice was not systematically explored.[7]

Technological development often proceeds in a manner decoupled from community values and broader questions of individual and collective purpose. In using technology, means and ends can be easily confused, and consequently community goals and requirements can be wrongly defined.[8] When the link between material needs and values is ignored, the role of technology as a vehicle for upraising the human condition becomes supplanted by a process that often turns people into passive subjects rather than active users and shapers of technological instruments.

Any tool can be used productively or destructively. But the most serious consequences of technology use are often quite subtle. The rapid adoption of new technology without reflection about possible impacts has sometimes upended longstanding social and cultural patterns, where entire domains of meaning and purpose in traditional cultures are displaced.[9] In such circumstances, technology itself becomes a bearer and even disrupter of values; it can cause individuals and communities to adapt to technology rather than use technology to extend human capability in harmony with social goals and mores. This pattern of "reverse adaptation", where technology structures and even defines the ends of human activity, is a widespread phenomenon.[10] The choices we make about technology, then, particularly when not fully evaluating their implications, may be at variance with our essential purposes, ideals, and norms. For this reason, as individuals, families, communities, and societies, we must reflect about how we design and deploy technological tools.

Technology can embed values in several other ways. It encourages that primacy be placed on efficiency, which can result in a failure to recognize negative externalities;[11] it emphasizes a reductionist approach to problem solving, which can lead to an atomistic versus a systems approach in addressing complexity;[12] and it fosters an instrumental rationality rather than a rationality concerned with overall quality of life and meaning.[13] In the end, such an orientation can result in an exaggerated reliance on technology where it is easier to diffuse technology rather than effect change in human attitudes and behavior.[14] A facile optimism that technology alone can ameliorate or resolve pressing social challenges often only serves to exacerbate the real problems at stake in a given context.

The Role of Technology in Advancing Civilization

The concept of human betterment, of an ever-advancing civilization in which both material and spiritual well-being are continually fostered, implies a central role for science and technology and, in particular, an evolving capacity for making appropriate technological choices. Such a capacity represents an expression of human maturation. A key concept articulated in the Bahá'í teachings is that the creation, application, and diffusion of knowledge lies at the heart of social progress and development. In the latter part of the 19th century, Bahá'u'lláh urged: "In this day, all must cling to whatever is the cause of the betterment of the world and the promotion of knowledge amongst its peoples."[15] And in a related passage, He affirmed: "The progress of the world, the development of nations, the tranquility of peoples, and the peace of all who dwell on earth are among the principles and ordinances of God."[16] These and other statements in the Bahá'í writings underscore that the set of human capacities necessary for building up the material and moral fabric of collective life is derived from an expanded notion of rationality that references both mind and spirit.

While extolling "the power of intellectual investigation and scientific acquisition" as a "higher virtue" unique to human beings, the Bahá'í writings recognize that scientific methodologies alone cannot tell us which ideas or norms best advance a specific social objective or competence.[17] The knowledge required to advance social well-being must be multidimensional, encompassing not only techniques, methodologies, theories, and models but also values, ideals, qualities, attributes, intuition, and spiritual discernment. Drawing on both science and religion allows us to satisfy these diverse knowledge requirements and to identify new moral standards and avenues of learning in addressing emerging contexts of social dilemma.[18] This sheds light on the full range of capabilities that must be employed in understanding, developing, evaluating, and using technology. In essence, technology is a magnifier of human intent and capacity, and consequently, it cannot become a substitute for human judgment or action.

The term "technology" derives from the Greek "techne," which is translated as "craft" or "art". In this sense, technology is the branch of human inquiry and activity relating to craftsmanship, techniques, and practices; to innovation and provision of objects; and to systems based on such objects. While the term "technology" is not explicitly used by Bahá'u'lláh or the Báb, we do find references to the "arts and sciences," "craftsmanship," and "invention." Bahá'u'lláh wrote: "Arts, crafts and sciences uplift the world of being, and are conducive to its exaltation. Knowledge is as wings to man's life, and a ladder for his ascent."[19] And in a prayer, the Báb wrote: "I yield praise unto Thee, O Lord our God, for the bounty of having called into being the realm of creation and invention."[20] The deep connection between the rational and creative dimensions of human endeavor is strongly emphasized by Bahá'u'lláh: "Erelong shall We bring into being ... exponents of new and wondrous sciences, of potent and effective crafts, and shall make manifest through them that which the heart of none of Our servants hath yet conceived."[21] It is fascinating that Bahá'u'lláh indicates that one principal sign of the "coming of age of the human race" will be the mastery of a particular scientific and technological art: "the discovery of a radical approach to the transmutation of elements."[22] The notion that something can be changed into something else reinforces the idea that it is not the material thing that is

of value but rather the conceptual insight and knowledge that makes such a transformation possible. This is an affirmation of our primary spiritual identity and agency as manifested by the gifts of creative intellect.[23] The noble and fertile powers of the human spirit can be seen in how the roles of the technologist and artist are in some sense equated and seen as central to the process of social advancement: "The purpose of learning should be the promotion of the welfare of the people, and this can be achieved through crafts. It hath been revealed and is now repeated that the true worth of artists and craftsmen should be appreciated, for they advance the affairs of mankind."[24]

In attempting to elaborate the essential characteristics of technology, one prominent analyst offers this description: "Technology is a programming of nature. It is a capturing of phenomena and a harnessing of these to human purposes."[25] 'Abdu'l-Bahá, Bahá'u'lláh's son and appointed successor, observes that "all the present arts and sciences, inventions and discoveries man has brought forth were once mysteries which nature had decreed should remain hidden and latent, but man has taken them out of the plane of the invisible and brought them into the plane of the visible."[26] These words suggest that technology is more than a mere "programming of nature" and that it serves as an evident expression of humanity's innate intellectual and inventive power. But He also warns about how this power can be distorted or misapplied. Speaking of the "malignant fruits of material civilization," 'Abdu'l-Bahá stresses that "human energy" must be "wholly devoted to useful inventions" and "concentrated on praiseworthy discoveries."[27] Moving towards more conscious and purposeful patterns of technological innovation that are in consonance with the values and aspirations of individuals and communities depends on both practical and spiritual awareness. There is no question, though, as to the pivotal function that science and technology play in effecting constructive social change and unleashing human potential. As 'Abdu'l-Bahá says: "Would the extension of education, the development of useful arts and sciences, the promotion of industry and technology, be harmful things? For such endeavor lifts the individual within the mass and raises him out of the depths of ignorance to the highest reaches of knowledge and human excellence."[28]

Mechanisms of Technological Choice

How then can individuals and communities be empowered to make meaningful choices about technology? How do we move from being passive technological users or subjects to active agents in constructively shaping patterns of technological development? Clearly, developing the capacity for technological assessment, innovation, and adaptation is vital to social progress. This requires the creation of grassroots, participatory mechanisms that foster a dynamic process of learning about technology. It entails the creation of consultative social spaces where communities can evaluate technological needs, options, and impacts. Langdon Winner observes that "both evaluations of technology and the cultivation of lasting virtues that concern technological choice must emerge from dialogue within real communities in particular situations."[29] The main challenge in this regard is "how to expand the social and political spaces where ordinary citizens can play a role in making choices early on about technologies that will affect them."[30] The philosopher Albert Borgmann echoes

this point by emphasizing that our use of technology has deep implications for our essential relationships—as family members, parents, citizens, and stewards of nature—and consequently it is necessary for us to reassess notions of the "good life" so that "technology can fulfill the promise of a new kind of freedom and richness" based on deeper human "engagement."[31] In short, we need to create opportunities for reflection at all levels of society that allow us to consciously build ways of life that integrate technology into a desirable conception of what it is to be human. And such a conception of human purpose cannot be dictated by prevailing materialistic structures and forces. Making proper technological choices is therefore bound up with processes of social, political, and moral development.

Practices of collective reflection and public consultation would appear to provide precisely the creative mechanisms needed to appraise new technologies in relation to overall personal and community goals. Such practices move us away from simply being "for" or "against" technology and instead represent a way for generating and applying knowledge in harmony with basic community aspirations. True community empowerment and learning, the bases of real sustainability, require local communities to define their own pathways of material development and progress. Such active and genuine participation, where practical knowledge is gained by the people most affected, lies at the heart of the Bahá'í approach to transforming social conditions and behavior. In the Bahá'í view, the primary task of material and social development activity is the raising of capacity among individuals, communities, and institutions across all regions and cultures, with the goal of a creating a civilization in which there exists a "dynamic coherence between the spiritual and practical requirements of life on earth."[32] This vision rejects "approaches to development which define it as the transfer to all societies of the ideological convictions, the social structures, the economic practices, the models of governance—in the final analysis, the very patterns of life—prevalent in certain highly industrialized regions of the world. When the material and spiritual dimensions of the life of a community are kept in mind and due attention is given to both scientific and spiritual knowledge, the tendency to reduce development to the mere consumption of goods and services and the naive use of technological packages is avoided."[33]

Changing the locus of power in relation to technological decision making—or what one theorist calls the "democratization" of technology that takes fuller account of human agency, needs, and values—has many dimensions.[34] Over the long term, communities need to establish institutional processes for systematizing learning about technology. This includes identifying, understanding, and internalizing relevant community values as they apply to the development and use of technologies. After many years of painful experience, it has become evident that the abrupt transfer of technology from outside a community or culture often doesn't have the desired effect. Such transfers are plainly not sustainable. The process of harnessing and deploying technical innovation takes time. This is why organizational capacity building at the local level, including collective proficiency in pursuing structured research, training, and deliberation, must be a central component of social development practice.

Stated another way, how does a community learn? Apart from individuals acquiring skills, there has to be a learning process where local groups or local centers of technology are not only absorbing but also generating knowledge. Once a process of this kind begins, everything is possible, including the development of informed technological decision making, constructive patterns of technology usage, and

invention appropriate to the needs of communities. As one development practitioner underscores, "Disseminating technology is easy, nurturing human capacity and institutions that put it to good use is the crux."[35]

Examples of such community capacity building and social capital formation abound.[36] In Kenya, the Kalimani Women's Group, an initiative influenced by Bahá'í principles, employed consultative methods among community members in developing access to safe drinking water for 6,000 people. Public deliberations focused on underlying health needs, invariably leading to issues of clean water access. Through this public goal-setting process, technological options were considered, including the use of subsurface dams—an innovative, appropriate technology. With assistance from technical non-governmental organizations, community members themselves built and maintained dams, and pumping and storage systems. Processes of evaluation and further project planning all flowed from participatory decision-making mechanisms.[37] This project, like other effective community-driven development initiatives, has demonstrated that technical learning optimally occurs through substantive and sustained social engagement and consultative interaction among key stakeholders. More broadly, mechanisms of accessible, ongoing community dialog can lead to new social understandings and transform arrangements of power affecting community members.[38]

Beyond specific social development initiatives, the global Bahá'í community itself, through its administrative institutions at the local, national, and international levels, has endeavored to utilize emerging technologies in a manner that aligns with goals of collective learning, organic growth, social empowerment and unity. In this respect, individuals and Bahá'í institutions are becoming increasingly aware that the development and use of technological tools must be determined by actual needs, patterns of activity, available resources, and overarching community objectives rather than any potentially novel methods that such tools can offer. A particular concern is that technologically driven approaches, without proper consideration of the reality of the pertinent administrative or community context, can result in solutions that are ineffective or even inconsistent with basic Bahá'í aims and norms. This has been especially true in relation to the introduction and use of information and communication technologies. As the Universal House of Justice, the governing body of the Bahá'í Faith, has stressed: "The capacity of the institutions and agencies of the Faith to build unity of thought in their communities, to maintain focus among the friends, to channel their energies in service to the Cause, and to promote systematic action depends, to an extent, on the degree to which the systems and instruments they employ are responsive to reality, that is, to the needs and demands of the local communities they serve and the society in which they operate...In this connection, we are instructed to provide a word of warning: The use of technology will, of course, be imperative to the development of effective systems and instruments...yet it cannot be allowed to define needs and dictate action."[39] Accordingly, circumstances in which technological devices and systems might distort individual and collective behavior through unanticipated cultural effects, promote efficiency at the expense of relationship building, lead to social fragmentation and disunity by serving only certain segments of a community, or undermine existing processes of capacity building and community building by diminishing the agency of community actors, would be closely scrutinized by Bahá'ís.[40] The development and use of technology, then, is grounded in essential Bahá'í values and the means by which those values are expressed in actual

community practice. In this way, those directly affected by technological instruments become active protagonists in determining how such instruments are applied to local circumstances and needs.

Consultative Processes about Technology at all Levels of Society

Experience indicates that taking account of relevant social context and values in conjunction with scientific parameters can move public discourse concerning technology forward. The key is to create settings that conduce to open-minded and engaged assessment of technical issues. An illustration of such an approach is found in the community deliberation processes promoted by the U.S. Environmental Protection Agency in relation to hazardous waste sites. In the case of widespread contamination of groundwater at Cape Cod's Massachusetts Military Reservation, stakeholder engagement and consultative processes, particularly the involvement of Cape Cod residents with technical experts, overcame initial community objections about the impacts of groundwater remediation strategies. Ongoing refinement and evaluation of remediation approaches led to community consensus and support for the project, as well as the use of renewable energy sources to reduce carbon emissions associated with the cleanup.[41] Although this example highlights a deliberative process addressing harmful impacts of previous technical actions and solutions, the value of the deliberative exercise is clear. Public consultative mechanisms can identify paths of inquiry and knowledge generation that can creatively reframe understanding of issues and thereby expand or alter existing viewpoints and inform public opinion, thus overcoming the tendency to resort to ideological predispositions when dealing with complex socio-technical matters.

Technological Determinism?

Even with robust deliberation and learning mechanisms, it can be difficult for communities to exercise control over technological trends and forces, especially when new techniques, devices, or systems originate externally, or if market mechanisms dictate particular technological pathways. For instance, specific agricultural methods, types of energy sources, or modes of communication technology can quickly become prevalent before social, ecological, ethical, and economic impacts within a particular local context are understood. Evaluating technologies can be extremely difficult, as is resisting particular technological trajectories. In a global economy of production, cycles of technological development are increasingly rapid, making it challenging even for the appropriate questions about our choices to be formulated by relevant social institutions.

A strategy of participation and awareness is the necessary starting point in preventing seemingly irrepressible technological and market forces from overwhelming individuals and communities. Even though complex socio-technical systems (transport, telecommunications, energy) seem to have monolithic or intractable attributes, suggesting that technology penetrates society in an irreversible or deterministic way, new directions are possible if societies assess options and adopt different technology policies.[42] This, though, requires immense moral and political will.

Agency or autonomy should not be attributed to technology, for it diverts attention from the human judgments and relations responsible for social change. As Leo Marx observes: "As compared with other means of reaching our social goals, the technological has come to seem the most feasible, practical and economically viable"—resulting in "neglect of moral and political standards" in making determinations about social directions.[43] Because individuals and societies construct, select and shape technologies, determinism cannot be an accurate description of how technologies are conceived, developed, and adopted. We should not reify technology but grapple with it in light of essential principles such as moderation, justice, social harmony, and cultural integrity.

Technological Prognostication

The issue of technological prognostication, of predicting how technologies emerge and evolve and what their social uses and effects might be, bears directly on the crucial issue of technological choice. It should be conceded that the manner in which technologies evolve and are used is not readily predictable. The history of technology is replete with examples of how particular devices and systems were ultimately used in unanticipated ways. The telephone was initially envisioned as an instrument to facilitate business transactions, but its adaptation by users at home, the so-called sources of "idle chatter," fundamentally transformed the telephone's role.[44] The Internet of today is something entirely different from what its military and scientific creators envisioned. Yet, specific applications can be analyzed from a functional as well as a values perspective and modified in accordance with our vision of a preferred implementation. The proper expression of technological choice, then, can affect the evolution and social adaptation of devices or technical systems.

Still, even with methodical processes of technological assessment in place, it is unlikely that we can discern the long-term implications of technological decisions made now. We can only do our best, using both reflective inquiry and ethical understanding to continually examine how technologies contribute to personal and collective advancement.

The Case of the Internet

The emergence of the Internet with its increasing penetration into all facets of human activity—social, economic, cultural, educational, political, and personal—offers a compelling illustration of the complex factors that determine whether technical innovation is deployed in a constructive or deleterious way. The Internet is dramatically reshaping patterns of communication and in so doing is effecting profound changes in human relationships encompassing individuals, families, the workplace, public institutions, and international affairs. Clearly, the Internet, as a socio-technical system, represents a far-reaching advance in the ability of the world's peoples to engage in new forms of interaction and collaboration, simultaneously contracting the planet and deepening bonds of interdependence. It offers tangible evidence that "the human race is now endowed with the means needed to realize the visionary goals summoned up by a steadily maturing consciousness. Viewed more deeply, this empowerment is potentially available to all of the earth's inhabitants, without regard to race, culture, or nation."[45] The Universal House of Justice observes

that "the Internet is a manifestation of a development anticipated by the Guardian[46] when, in describing the characteristics of a unified humanity, he foresaw that a 'mechanism of world inter-communication will be devised, embracing the whole planet, freed from national hindrances and restrictions, and functioning with marvellous swiftness and perfect regularity.' Yet, learning to utilize the Internet in a manner conducive to material and spiritual progress is an immense challenge."[47] The Internet, in essence, mirrors social reality, expressing and amplifying contradictory instances of human achievement and moral breakdown: "It is useful to bear in mind that the Internet is a reflection of the world around us, and we find in its infinitude of pages the same competing forces of integration and disintegration that characterize the tumult in which humanity is caught up."[48] Its striking and disruptive emergence cannot be viewed as being detached from the aims and norms of its users and creators.

An analysis of the impacts of the Internet is obviously beyond the scope of this commentary, but a brief look at the current discourse concerning online social media is instructive. Statistics tell part of the story: as the number of global Internet users approaches four billion people, the vast majority participate on one or more major social media platforms or sites revolving around voluntary social creation and sharing —Facebook, WeChat, Twitter, WhatsApp, Instagram, Weibo, Pinterest, Snapchat, Telegram, Reddit, YouTube, etc.[49] But it could be said that the various forms of social media are now at a crossroads. The enormous social, cultural, and political impact of major online social platforms is now being closely scrutinized by governments, public interest groups, academics, and individuals. Issues of privacy and security, abusive behavior, and false or hateful content are some of the prevailing concerns. The role of these tools in affecting youth identity and behavior is another.[50] These issues, coupled with the fact that these powerful services can be manipulated and misused by any individual or group in any part of the world, have served as a wakeup call to everyone concerned about the unintended impacts of technology. As Sheryl Sandberg, the chief operating officer of Facebook, remarked in response to the discovery that Facebook had allowed advertisers to target users using the term "Jew hater" and other offensive phrases, "We never intended or anticipated this functionality being used this way — and that is on us." One technology commentator referred to this as "Facebook's Frankenstein moment."[51] Further disclosures that the personal data of tens of millions of Facebook users had been improperly obtained and repurposed by a third party in an effort to politically influence those users has greatly amplified public demands for greater accountability in how such data is collected and safeguarded.[52] A challenging aspect of this circumstance is that any remedial actions are likely to be in tension with the prevailing online business model of collecting personal data for use in advertising.[53]

The developments of the past few years have resulted in a palpable shift in attitude of major technology companies from one of "we just provide the platforms for free expression and the content is not our concern" to one of active engagement to detect and remove offensive, incendiary, or defamatory material. That their own policies on such objectionable content are still frequently violated and not understood by their own staff who make content decisions and that a reliance on technical algorithms to detect problematic accounts or content still requires much refinement reveal the challenges that exist in just this one area concerning corporate responsibility. Particularly deplorable examples include the harassment of individuals,

especially women, and the incitement of violence against specific ethnic or religious groups.[54]

Questions of authenticity and integrity also abound. An investigative piece exposed how various public figures and organizations systematically buy audiences and followers that are not real.[55] In early 2018, nearly fifty million users on Twitter and sixty million on Facebook were found to be automated accounts designed to simulate real people; in short, we not only have "fake news" and fake facts, but fake people followed by fake audiences. This reality has been aptly described by some observers as an emerging battlefield between "falsehood and veracity" that will only deteriorate as new forms of sophisticated but counterfeit audio and video technology are increasingly deployed for purposes of manipulating public opinion. All of this diminishes social trust between individuals and between citizens and their social institutions, amplifying forces of cynicism, division, and disorder. Bahá'u'lláh's affirmation that "Trustworthiness is the greatest portal leading unto the tranquility and security of the people. In truth the stability of every affair hath depended and doth depend upon it," as well as His call to the news media to "investigate the truth" and "vindicate it," resonate deeply at this moment.[56] A related issue is that calls for greater media literacy in society are likely to fail to address problems of propaganda, false news, and hate speech precisely because social and cultural identity are primary determinants of how people interpret reality.[57] It is apparent that, as Bahá'u'lláh avers, everything needs to be made "anew": human purpose and identity, values, and all social relationships must be reconceived in light of the essential spiritual nature of human beings and a more expansive conception of solidarity encompassing the boundaries of the planet itself.[58]

The corrosive influences of materialism, moral relativism, incivility, and ingrained prejudice now battering society are not only magnified by online tools, but in some instances are assuming new, baleful forms. Even algorithms and data depicting apparently straightforward social facts are affected by these influences.[59] Online social networks increasingly express a prevailing ethos of "connected isolation" and polarization, where ideological or group identity seemingly filters and categorizes every idea almost immediately. The scaling effect of technology, where large online networks allow content to reach heterogeneous and unknown audiences around the globe, can result in "context collapse" where the intent of posters is misinterpreted or misrepresented.[60] Further, the subtle and distinctive cultural characteristics of different online spaces can distort interactions among participants and undermine individual and collective goals.[61] Dedicated, more meaningful networks, focused on shared interests or based on local connections, and less driven by commercial imperatives, might serve as productive alternatives.[62] Greater public awareness and some forms of policy intervention by governments may mitigate the impact of the more egregious misuses of online social networks. Any effective policy intervention must ensure national and local community involvement in determining standards for online platforms. Relying on international human rights norms rather than the arbitrary judgments of the platforms themselves has been advanced as a better basis for the development of such standards.[63] Still, that a few major profit-making platforms have taken hold in virtually every country in the world (Google, Facebook, Instagram, YouTube, Twitter), basically serving as information gatekeepers of social reality, reveals technological and economic lock-in effects that are hard to overcome.

Approaches to decentralization, such as blockchain applications, some with a communitarian, anti-market flavor, are a response to such "hegemonic online services."[64] That our "attention" is captured by these online services and then repackaged and sold is a particularly seductive characteristic of these tools.[65] Indeed, the ultimate expression of technological passivity perhaps is the idea that individual users become the "product" when they provide personal information in exchange for free use of these commercial platforms.[66]

Moving to an Internet that is less dominated by Western institutions, worldviews, and forms of expression is also of vital importance. Reconceiving how devices and online services can serve the diverse populations of the planet speaks to the centrality of knowledge generation and application as the principal social process of every community and society. Relevant local values and objectives must guide the design of tools and the types of content generated and shared. For instance, online social spaces might be configured to reinforce processes of trust-building and cooperative action characteristic of many cultures. Such a shift could work to supplant the excessive focus on the self which is fostered by popular social media spaces in the West with the more communal and oral forms of expression found throughout the world.[67] The increased presence of such diverse contributions and perspectives would surely enrich patterns of collective learning and endeavor.

While it is undoubtedly true that new online media have been dominated and co-opted by commercial influences and very much reflect the disintegrative and adversarial modes of society, all is not negative. These same tools and services simultaneously offer countervailing examples of how digital media can inform, uplift, and be a source of social mobilization. First, at the level of technological infrastructure, the various "open source" systems, designed and implemented largely through voluntary collaboration of large numbers of people across the globe, have enabled the Internet to emerge as the world's most accessible form of universal communication and exchange. More important, the platforms of interaction that this infrastructure provides have led to new forms of social outreach, relationship building and sharing, cooperation, and creative expression. Examples such as the instance of thousands of teenage girls in South Korea networking and forcing their national government to change public policy, the remarkable case of Wikipedia as a form of massive voluntary social production, the new tools of online higher education opening the doors of knowledge to students around the world, the different vehicles for marginalized voices to express themselves and find solidarity with others, and the ability for hitherto isolated peoples to interact and learn from each other illustrate how the Internet and its social manifestations are an unparalleled phenomenon and an expression of a global age.

Where will social media be in five years? Ten years? What new forms of social interaction might emerge? However innovative augmented reality, artificial intelligence, advanced security systems, and other technical developments might be in transforming the existing online experience, the human need for meaningful connection, integrity, beauty, dignity, and higher individual and collective purpose certainly will matter more. Here, Bahá'ís will endeavor to discover how elements of this technology can be used in a way that coheres with the goals of personal and social transformation. Essential concepts such as the oneness of the human family and the nobility and equality of all human beings will guide such efforts. Ensuring equity in how technological resources are cultivated, allocated, and utilized by diverse

communities will be an important corollary goal. At the level of human interaction, given the prevailing characteristics of the online environment, perseverance and discipline will be required if Bahá'í standards of courtesy, fairness, amity, forbearance, probity, accuracy, empathy, wisdom, and an impartial search for truth are to be upheld and emulated.[68]

In the end, despite the motives and values of their creators and the many unforeseen, adverse impacts on individual and collective life, online social tools can be used constructively. It is human beings who determine how technologies are developed and applied. For many, the physical and online worlds are increasingly merging. If utilized in a balanced fashion, in accordance with primary human norms and community objectives, social media and related technologies can serve to broaden vision concerning challenging social and moral questions, shape public discourse in a unifying way, promote mutual understanding and learning, and emphasize the potentialities and promise of the present moment in human affairs.

Conclusion

The overall vision guiding pathways of technological development and use cannot come from technology itself; it must be informed by essential ideals, spiritual insight, and actual participatory practice that promote the common good. A constructive pattern of technology development, as described here, emerges as a natural outgrowth of community-building processes, where specific technical solutions are conceived through collective identification of needs by affected populations and refined through an iterative process of learning. Rigorous processes of technological assessment at all levels of society provide the only basis for ensuring that technology is used in a manner that advances individual and collective well-being. Raising the capacity of individuals, communities, and institutions to make appropriate technological choices is therefore critical, for such choices are themselves an expression of values—social, cultural, economic, political, ethical, and spiritual. In this regard, Bahá'í-inspired models of consultation and knowledge generation offer precisely the mechanisms required to make suitable and proactive technological decisions in light of fundamental needs and mores. Ultimately, as technological innovation occurs within well-defined social, economic, and political contexts, broader societal transformation must occur so that technological trajectories can become aligned with our aspirations and purpose as noble agents advancing civilization.

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Notes

1. David Nye, *Technology Matters: Questions to Live With* (Cambridge: MIT Press, 2007), 47.
2. In relation to reinforcing patterns of social inequity, modern technological infrastructures sometimes are designed or distributed in a manner that does not benefit all populations of a society. Examples of strategic deployments of technology at the national level include large investments in space and military programs.
3. Dennis Goulet, *Uncertain Promise: Value Conflicts in Technology Transfer* (New York: New Horizons Press, 1989), 24.
4. Andrew Feenberg, "From Essentialism to Constructivism: Philosophy of Technology at the Crossroads," in *Technology and the Good Life*, eds. E. Higgs, A. Light, D. Strong (Chicago: University of Chicago Press, 2000), 294–315.

5. As an example, the widespread use of fetal ultrasound technology has impacted decision making regarding childbirth.

6. The notion of "appropriate technology," as technology of small scale that is ecologically sound and locally autonomous was championed by the economist E.F. Schumacher in his work *Small is Beautiful: Economics as if People Mattered*, 1973.

7. Farzam Arbab, "Promoting a Discourse on Science, Religion, and Development," in *The Lab, The Temple and the Market: Reflections at the Intersection of Science, Religion, and Development*, ed. Sharon Harper (Ottawa: International Development Research Centre, 2000), 149–237.

8. The "One Laptop per Child" initiative illustrates the failure to harmonize means and ends. While technical innovation allowed laptops to be produced for slightly more than $200 per device, little or no effort was made to develop pedagogical material utilizing the technology. Initial surveys from Peru, where the laptops were widely distributed in schools, indicate no improvement in educational performance by students apart from learning how to use the laptops. Critics contend that the funds used for the laptops would have been better applied to teacher training. See, "The Failure of One Laptop per Child," http://hackeducation.com/2012/04/09/the-failure-of-olpc.

9. See, for example, the case of the Skolt Lapps, Pertti J. Pelto, *The Snowmobile Revolution: Technology and Social Change in the Arctic* (Prospect Hts, Ill: Waveland Press, 1987).

10. An illustration of "reverse adaptation" is that the availability of SMS technology has transformed the nature, frequency, style and substance of personal communication. While SMS texting is undoubtedly a useful tool, in some respects it has also displaced other forms of meaningful communication or created a perceived need on the part of many for the constant sharing of trivial information. Outsourcing our personal decision-making to algorithms is another example of how many people have adapted to new technologies. Such outsourcing is, in a way, a moral choice; we may be gaining efficiency but at the cost of opening ourselves up to forces of persuasion that distort our intentions. The concept of reverse adaptation is discussed in Langdon Winner, *Autonomous Technology: Technics-out-of-control as a Theme in Political Thought* (Cambridge: MIT Press, 1977), 227–29.

11. The classic illustration of negative externalities is the failure to take account of environmental impacts of technical innovation or industrial activity.

12. A reductionist approach can be found in the emphasis on recycling versus the reconsideration of systems of production and consumption. The former is obviously easier to pursue than the latter. In relation to particular social needs, there are usually different levels of technical solutions possible, with each succeeding solution having a higher degree of organizational complexity and a more formidable set of institutional and economic obstacles. An example would be the development of a mass transit system in lieu of a system relying on personal transport via automobiles. The adoption of the most optimal solution in terms of efficiency and aggregate environmental impacts—mass transit—requires active engagement and assent of the citizenry affected as it entails a different distribution of social resources.

13. Goulet, *Uncertain Promise*, 17–22. What is at issue here is a general attitude fostered by a technological way of life where technology and everything it affects become instrumental—a means to an end—but the ends aren't defined. Technology can prevent us from appreciating what is of true significance in leading a purposeful life, and thus the meaning invested in relationships and other aspects of life becomes diminished.

14. An example of this "technological fix" mentality is the idea of "geo-engineering," which involves intentional, large-scale technical manipulations of the Earth's climate system either by reflecting sunlight or removing carbon dioxide from the air. Many scientists are concerned about the unknown risks of such approaches to alter complex natural systems. See: "Technological 'Solutions' to Climate Change," https://www.scientificamerican.com/article/geoengineering-solutions/.

15. Bahá'u'lláh, cited in 26 November 2003 letter of the Universal House of Justice to the Bahá'ís of Iran.

16. Bahá'u'lláh, *Tablets of Bahá'u'lláh Revealed after the Kitáb-i-Aqdas* (Haifa: Bahá'í World Centre, 1978), 129.

17. 'Abdu'l-Bahá, *The Promulgation of Universal Peace: Talks Delivered by 'Abdu'l-Bahá during His Visit to the United States and Canada in 1912*, rev. ed. (Wilmette: Bahá'í Publishing Trust, 1982), 49.

18. The harmony of science and religion is an essential Bahá'í tenet: "...faith in God and confidence in social progress are in every sense reconcilable...science and religion are the two inseparable, reciprocal systems of knowledge impelling the advancement of civilization" (The Universal House

of Justice, 26 November 2003). Religion is regarded as an evolutionary and civilizing phenomenon addressing knowledge at two principal levels: first, providing insight concerning human purpose, provenance, and identity; and second, informing us as social beings about the essential parameters of social interaction and the very nature of the social order, particularly how it should be constructed to reflect principles of fairness, empathy, and cooperation. As an essential expression of reality, religion is not to be dismissed as an atavistic phenomenon irrelevant to the processes of social advancement. Rather, it is a primary force shaping human consciousness, ensuring that humanity's distinctive potentialities, particularly its rational powers, are constructively channeled.

19. Bahá'u'lláh, *Epistle to the Son of the Wolf* (Wilmette: Bahá'í Publishing Trust, 1971), 26. The "knowledge" referred to here in the original Arabic is *'ilm*. Two principal types of knowledge are alluded to by Bahá'u'lláh: *'ilm*, referring to knowledge gained by the use of reason, investigation and sensory perception, and *irfán*, referring to spiritual insight, awareness and inner knowledge. That *irfán* and *'ilm* are deeply connected is underscored by Bahá'u'lláh throughout His writings. For example, He states: "The source of all learning (*'ulúm*, plural of *'ilm*) is the knowledge of God (*irfán Allah*)." *Tablets of Bahá'u'lláh*, 159.

20. The Báb, *Selections from the Writings of the Báb* (Haifa: Bahá'í World Centre, 1976), 195. The Báb and Bahá'u'lláh were the Twin Founders of the Bahá'í Faith. The Báb was both the "inaugurator of a separate religious Dispensation" and the "inspired Precursor" of Bahá'u'lláh. Shoghi Effendi, *The World Order of Bahá'u'lláh: Selected Letters* (Wilmette: Bahá'í Publishing Trust, 1991), 123.

21. Bahá'u'lláh, *Summons of the Lord of Hosts: Tablets of Bahá'u'lláh* (Haifa: Bahá'í World Centre, 2002), 1.67.

22. Bahá'u'lláh, *Kitáb-i-Aqdas* (Haifa: Bahá'í World Centre, 1993), n. 194. Physicists have transmuted bismuth into gold in minute quantities via particle accelerators but at considerable cost. See: "Fact or Fiction?: Lead Can Be Turned into Gold," *Scientific American* (January 2014), https://www.scientificamerican.com/article/fact-or-fiction-lead-can-be-turned-into-gold/ . It appears that Bahá'u'lláh is alluding to great advances in the science of transmutation. Natural transmutation of the elements via nuclear fusion reactions in stars is responsible for the creation of the most common elements of the universe including helium, oxygen, carbon and iron. Heavier elements such as lead, gold, and uranium result from higher energy reactions associated with supernovas.

23. The Bahá'í teachings indicate "that we have three aspects of our humanness, so to speak, a body, a mind and an immortal identity—soul or spirit. We believe the mind forms a link between the soul and the body, and the two interact on each other." Letter written on behalf of Shoghi Effendi, 7 June 1946, in Shoghi Effendi, *Arohanui: Letters to New Zealand* (Suva, Fiji: Bahá'í Publishing Trust, 1982), 89.

24. Bahá'u'lláh, in *Compilation on the Arts*, in *The Compilation of Compilations*, Vol. I (Monavale: Bahá'í Publications Australia, 1991), 3.

25. W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (New York: Free Press, 2009), 203.

26. 'Abdu'l-Bahá, *The Promulgation of Universal Peace*, 359.

27. 'Abdu'l-Bahá, *Selections from the Writings of 'Abdu'l-Bahá* (Wilmette: US Bahá'í Publishing Trust, 1982), 303.

28. 'Abdu'l-Bahá, *The Secret of Divine Civilization* (Wilmette: US Bahá'í Publishing Trust, 1990), 14.

29. Langdon Winner, "Reply to Mark Elam." *Science, Technology, & Human Values* 19, no. 1 (1994): 107.

30. Ibid.

31. Albert Borgmann, *Technology and the Character of the Contemporary Life* (Chicago: University of Chicago Press, 1984), 248.

32. The Universal House of Justice, 20 October 1983, in a letter written to the Bahá'ís of the world, online at: http://www.bahai.org/library/authoritative-texts/the-universal-house-of-justice/messages.

33. *Social Action*, a paper prepared by the Office of Social and Economic Development at the Bahá'í World Centre, 26 November 2012.

34. Andrew Feenberg, *Questioning Technology* (New York and London: Routledge, 1999).

35. Kentaro Toyama, "Can Technology End Poverty?", *Boston Review* (November 1, 2010), http://bostonreview.net/forum/can-technology-end-poverty .

36. A growing body of research underscores the central role of social capital in fostering economic development, social cohesion, and patterns of public participation. Social capital is "an asset, a functioning propensity for beneficial collective action" and is determined by the quality of

relationships within a group, community or organization. The formation or enhancement of social capital in a community principally depends on the creation of social spaces and institutions that foster changes in thinking, attitudes and behavior—changes that promote collective exchange, learning and action. Research indicates that social capital builds up as a result of discursive or consultative processes in which stakeholders continually work to elaborate a common understanding of collective objectives. Anirudh Krishna, *Active Social Capital* (New York, Columbia University Press, 2002).

37. See "In Kenya, consultation and partnership are factors for success in development," *One Country* 11, no. 1 (April–June 1999), http://onecountry.org/story/kenya-consultation-and-partnership-are-factors-success-development.

38. Transforming arrangements of power is intimately tied to social identity and to the primary values of a community. These factors directly affect, for example, local governance structures, the station and role of women, attitudes toward education, and allocation of community resources. Individual and collective behavior naturally change, and in a beneficial way, when attitudes and values become clear through community consultation. Some of the more dramatic development successes in recent years have involved the reaffirmation or redefinition of basic social norms through community dialog—for example, management of local environmental resources or elimination of practices adversely affecting young women and girls. For an overview of the Bahá'í community's approach to social and economic development, see *For the Betterment of the World*, http://dl.bahai.org/bahai.org/osed/betterment-world-standard-quality.pdf.

39. From a letter dated 30 March 2011, written on behalf of the Universal House of Justice to a National Spiritual Assembly.

40. For instance, due to the dominance of technology platforms and tools created in the West, content or applications emanating from that source can have unexpected cultural impacts on communities in other parts of the world. The patterns of communication facilitated by technological tools can also adversely affect the culture of a community. In this respect, Bahá'ís "must aim to raise consciousness without awakening the insistent self, to disseminate insight without cultivating a sense of celebrity, to address issues profoundly but not court controversy, to remain clear in expression but not descend to crassness prevalent in common discourse, and to avoid deliberately or unintentionally setting the agenda for the community or, in seeking the approval of society, recasting the community's endeavors in terms that can undermine those very endeavors." From a letter dated 4 April 2018 written on behalf of the Universal House of Justice to a National Spiritual Assembly.

41. "Facilitating A Superfund Cleanup on Cape Cod," Consensus Building Institute, http://www.cbuilding.org/publication/case/facilitating-superfund-cleanup-cape-cod.

42. The emergence of "demand-side management" in the energy utility sector—emphasizing and rewarding energy conservation instead of building more power plants—is a significant shift from a few decades ago. The related integration of decentralized renewable sources is also contributing to the transformation of energy systems. These changes in the United States and other countries have been facilitated by changes in regulatory law. It should be noted, though, that the technology policies of governments rarely give explicit attention to social and environmental exigencies, while social and environmental policies rarely take account of technological opportunities. There is a need for greater coherence.

43. Leo Marx, "Technology: The Emergence of a Hazardous Concept," *Technology and Culture* 51, no. 3 (July 2010): 561–77.

44. This points to the key role of users in determining how technology is deployed and evolves. Both creators and users of technology play a role in how systems and tools are utilized.

45. Bahá'í International Community, *Who Is Writing the Future? Reflections on the Twentieth Century* (February 1999).

46. Shoghi Effendi was the Guardian and appointed head of the Bahá'í Faith from 1921–1957.

47. From a letter dated 9 October 2015 written on behalf of the Universal House of Justice to a National Spiritual Assembly.

48. From a letter dated 9 April 2008 written on behalf of the Universal House of Justice to an individual.

49. See: http://www.internetlivestats.com/ . At the end of 2017, Facebook alone had 2.2 billion monthly active users and YouTube 1.3 billion such users.

50. How youth navigate the complex nexus between online and physical realities is one major concern. The presentation of the "curated self"—involving a focus on superficial and fleeting

interests—raises many questions. What happens to the internal self when the external world watches and comments on every thought, every interest, every mistake? The phenomenon of addictive behavior, along with the reduced ability to concentrate and socialize with others among children and adolescents is another emerging concern. See, for example, Jean M. Twenge, "Have Smartphones Destroyed a Generation?" (September 2017), https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/.

51. Kevin Roose, "Facebook's Frankenstein Moment," *The New York Times* (21 September 2017) https://www.nytimes.com/2017/09/21/technology/facebook-frankenstein-sandberg-ads.html.

52. See Cecilia Kang and Sheera Frenkel, "Facebook Says Cambridge Analytica Harvested Data of Up to 87 Million Users," *The New York Times* (4 April 2018), https://www.nytimes.com/2018/04/04/technology/mark-zuckerberg-testify-congress.html . In addition, Facebook admitted that most users should assume that their personal information had been "scraped" by third parties who have exploited certain search features.

53. Regulatory initiatives are one type of response to the issue of data protection. For instance, in May 2018, the European Union implemented the General Data Protection Regulation, a new data privacy law intended to ensure that Internet users understand what data is being collected about them and consent to that data being shared. It represents a proactive effort to treat data privacy and security as central variables in the design of technological systems. Whether such regulation will be effective in safeguarding data privacy is an open question. Some observers have called for regulatory policies that go beyond EU rules that would allow individuals to review all the data that a company has collected on them, including inferential information generated about individual preferences; limit data collection for specific purposes and limited time periods; monitor the use of aggregate data like health and financial information; and penalize companies for data breaches. See Zeynep Tufekci, "We Already Know How to Protect Ourselves From Facebook," *The New York Times* (9 April 2018). https://www.nytimes.com/2018/04/09/opinion/zuckerberg-testify-congress.html.

54. See Debbie Chachra, "Twitter's Harassment Problem Is Baked Into Its Design," *The Atlantic* (16 October 2017), https://www.theatlantic.com/technology/archive/2017/10/twitters-harassment-problem-is-baked-into-its-design/542952/ and Amanda Taub and Max Fisher, "Where Countries Are Tinderboxes and Facebook Is a Match," *The New York Times* (21 April 2018), https://www.nytimes.com/2018/04/21/world/asia/facebook-sri-lanka-riots.html . Civil society groups have criticized Facebook for aggressively expanding into developing societies with fragile institutions and histories of social instability, where social media can be readily misused to channel anger and fear into physical violence. As a government spokesperson in Sri Lanka said, "There needs to be some kind of engagement with countries like Sri Lanka by big companies who look at us only as markets. We're a society, we're not just a market."

55. This with the goal of giving a false sense of an account's popularity. See Nicholas Confessore et al., "The Follower Factory," *The New York Times* (27 January 2018), https://www.nytimes.com/interactive/2018/01/27/technology/social-media-bots.html.

56. *Tablets of Bahá'u'lláh*, 37; and Bahá'u'lláh's Tablet to the Times of London, cited in *The Bahá'í World*, Vol. XVIII, 977.

57. The question of what constitutes "truth" is increasingly viewed as a question about the validity of the sources and methods used to gain knowledge, which for some is a subjective matter and frequently a question of power. One commentator refers to this circumstance as "epistemological warfare," where the propagation of any point of view is understood not only as free speech but also as an uninhibited "right to be amplified." See Danah Boyd, "You Think You Want Media Literacy... Do You?" Data and Society: Points, https://points.datasociety.net/you-think-you-want-media-literacy-do-you-7cad6af18ec2 . The associations and values of individuals, sometimes referred to as "cultural cognition," frequently predispose people in how they react to information, including scientific information. For example, ideological identity can determine how individuals understand certain facts such as evidence of climate change. See Dan M. Kahan, "Fixing the Communications Failure," *Nature* 463 (2010): 296–97.

58. For Bahá'ís, "facts" and "values" derived from scientific and religious understanding express different facets of a single reality, and thus serve as complementary tools for discovering meaning at the individual and collective level. In the end, "knowledge" and "truth," in whatever form and whatever manner they are determined, must serve a higher aim—the realization of inner human

potential, "the betterment of the world," and ultimately the attainment of the "good-pleasure of God."

59. As a consequence of intrinsic structural biases with data relating to gender and race, the issue of ethics and artificial intelligence is becoming an important focus of Internet researchers and public activists. See, for example, Navneet Alang, "Turns Out Algorithms are Racist," *The New Republic* (31 August 2017), https://newrepublic.com/article/144644/turns-algorithms-racist, and Will Knight, "Forget Killer Robots—Bias Is the Real AI Danger," *MIT Technology Review* (3 October 2017), https://www.technologyreview.com/s/608986/forget-killer-robotsbias-is-the-real-ai-danger/.

60. For instance, exchanges online involving hundreds or thousands of participants from different social and cultural backgrounds would never exist in a physical space. More often than not, online spaces of this type have proven to be socially and dialogically unmanageable. See "Context Collapse in Social Media," HLWIKI International, http://hlwiki.slais.ubc.ca/index.php/Context_collapse_in_social_media.

61. Different online spaces have a cultural logic often dictated by the designers of the spaces. For example, some social media platforms encourage immediacy of response and reaction or privilege dominant voices rather than valuing the quality of exchange or interaction.

62. Customized social networks such as found on Ning.com or dedicated spaces within larger networks committed to civil and constructive exchange as on medium.com offer examples of what is possible. Networks based on privacy and no advertising, such as Diaspora and Ello, have drawn attention but have struggled to gain a critical mass of users.

63. This includes delineating the rights and responsibilities of users, as well safeguards to ensure that freedom of expression is not unduly curtailed. See, David Kaye, UN Special Rapporteur on the right to freedom of expression, "How to 'fix' social media without censorship," June 20, 2018, https://www.reuters.com/article/us-kaye-media-commentary/commentary-how-to-fix-social-media-without-censorship-idUSKBN1JF34H.

64. See Steven Johnson, "Beyond the Blockchain Bubble," *The New York Times* (16 January 2018), https://www.nytimes.com/2018/01/16/magazine/beyond-the-bitcoin-bubble.html?_r=0 . Blockchains are cryptographically secure blocks of information linked by a network of ledgers that record these blocks in a verifiable and permanent way. Information within the blocks cannot be altered unless all the ledgers involved agree to the change. This is sometimes referred to as "decentralized consensus." Blockchains and distributed ledgers underpin cryptocurrencies, but the real potential of these tools is seen by many to lie in the "community-governed, decentralized networks with capabilities that will eventually exceed those of the most advanced centralized services." See Chris Dixon, "Why Decentralization Matters," Medium (February 2018), https://medium.com/@cdixon/why-decentralization-matters-5e3f79f7638e.

65. Some observers have assailed this practice of major Internet platforms as "surveillance capitalism," as most users are unaware that their online activity is being systematically tracked, which, when combined with other personal data gathered by online platforms, allows for highly targeted advertising based on user preferences and behavior.

66. That autonomous individuals becomes so subsumed by technology that they become extensions of technology and consumer culture is a notion advanced by the theorist Herbert Marcuse. See his 1964 work *One Dimensional Man*.

67. In this regard, user interfaces might be designed to foster oral communication in the many indigenous languages of the world. See Ramesh Srinivasan, "The People's Internet – Supporting the voice and values of billions of new technology users," https://medium.com/thrive-global/the-peoples-Internet-284ce046fabd.

68. "In this day man must investigate reality impartially and without prejudice in order to reach the true knowledge and conclusions." 'Abdu'l-Bahá, *The Promulgation of Universal Peace*, 75.