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Many articles published in *The Journal of Bahá'í Studies* allude to the institutions and central figures of the Bahá'í Faith; as an aid for those unfamiliar with the Bahá'í Faith, we include here a succinct summary excerpted from http://www.bahai.org/beliefs/bahaullah-covenant/. The reader may also find it helpful to visit the official web site for the worldwide Bahá'í community (www.bahai.org) available in several languages. For article submission guidelines, please visit http://bahai-studies.ca/the-journal-of-bahai-studies-submission-guidelines/.

About the Bahá'í Faith

The Bahá'í Faith, its followers believe, is "divine in origin, all-embracing in scope, broad in its outlook, scientific in its method, humanitarian in its principles and dynamic in the influence it exerts on the hearts and minds of men." The mission of the Bahá'í Faith is "to proclaim that religious truth is not absolute but relative, that Divine Revelation is continuous and progressive, that the Founders of all past religions, though different in the non-essential aspects of their teachings, "abide in the same Tabernacle, soar in the same heaven, are seated upon the same throne, utter the same speech and proclaim the same Faith" (Shoghi Effendi).

The Bahá'í Faith began with the mission entrusted by God to two Divine Messengers—the Báb and Bahá'u'lláh. Today, the distinctive unity of the Faith They founded stems from explicit instructions given by Bahá'u'lláh that have assured the continuity of guidance following His passing. This line of succession, referred to as the Covenant, went from Bahá'u'lláh to His Son 'Abdu'l-Bahá, and then from 'Abdu'l-Bahá to His grandson, Shoghi Effendi, and the Universal House of Justice, ordained by Bahá'u'lláh. A Bahá'í accepts the divine authority of the Báb and Bahá'u'lláh and of these appointed successors.

The Báb (1819-1850) is the Herald of the Bahá'í Faith. In the middle of the 19th century, He announced that He was the bearer of a message destined to transform humanity's spiritual life. His mission was to prepare the way for the coming of a second Messenger from God, greater than Himself, who would usher in an age of peace and justice.

Bahá'u'lláh (1817-1892)—the "Glory of God"—is the Promised One foretold by the Báb and all of the Divine Messengers of the past. Bahá'u'lláh delivered a new Revelation from God to humanity. Thousands of verses, letters and books flowed from His pen. In His Writings, He outlined a framework for the development of a global civilization which takes into account both the spiritual and material dimensions of human life. For this, He endured 40 years of imprisonment, torture and exile.

In His will, Bahá'u'lláh appointed His oldest son, 'Abdu'l-Bahá (1844-1921), as the authorized interpreter of His teachings and Head of the Faith. Throughout the East and West, 'Abdu'l-Bahá became known as an ambassador of peace, an exemplary human being, and the leading exponent of a new Faith.

Appointed Guardian of the Bahá'í Faith by 'Abdu'l-Bahá, His eldest grandson, Shoghi Effendi (1897-1957), spent 36 years systematically nurturing the development, deepening the understanding, and strengthening the unity of the Bahá'í community, as it increasingly grew to reflect the diversity of the entire human race.

The development of the Bahá'í Faith worldwide is today guided by the Universal House of Justice (established in 1963). In His book of laws, Bahá'u'lláh instructed the Universal House of Justice to exert a positive influence on the welfare of humankind, promote education, peace and global prosperity, and safeguard human honor and the position of religion.

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From the Editor's Desk

JOHN S. HATCHER

The Amazing Nashville Bahá'í Community in the 1960s

I declared myself a Bahá'í on the 31st of December 1959 while I was home in Atlanta on spring break from Vanderbilt University. Weeks later, I found myself one night standing before the impressive array of individuals who constituted the Local Spiritual Assembly of Nashville, Tennessee. There was my brother—William S. Hatcher, five years my senior—who had responded to everything I could think to ask about the Bahá'í Faith and who had declared in June 1957. I had come up for his graduation and met some of the interesting people who would later become an important part of my life. Bill, of course, later went on to write books on the Faith and serve on the National Spiritual Assemblies of Switzerland, Canada, and Russia.

There was Dr. Sarah Pereira (later a member of the National Spiritual Assembly of the United States and then an Auxiliary Board member); Erma Hayden, a concert pianist later to serve on the National Teaching Committee of the United States; and her husband, Robert Hayden, a professor and poet (later to become a member of the University of Michigan faculty and the first African American to be poet

laureate of the United States). There were Casey and Alice Walton, Georgia Miller, Winston Evans, and Mary Watkins, editor at the Methodist Publishing House. All of their amazing stories are much too lengthy and noteworthy to detail here.

At the time, I was merely a sophomore at Vanderbilt, having studied the Faith intensely for two years, a bit nervous, but also keen to respond to the queries that—in my mind—would enable the Local Spiritual Assembly to determine if I was sufficiently worthy and informed to become a member of the community led by this stellar group of notables—educators, editors, poets, musicians, mathematicians.

Suffice it to say that I "passed," was joyfully accepted into their midst, and spent the next three years getting to know and love them, and, most important of all, establishing in my heart and mind what a Bahá'í community should be, how it should feel, and how it should conduct its affairs.

That foundation has stood me in good stead for sixty years, and I happily utilize this opportunity as editor of the *Journal of Bahá'í Studies* to present brief life sketches of two individuals from that community in our continuing attempt to celebrate those African-American Bahá'ís whose lives, works, and reputations represent some of the fruitful results stemming from the longtime emphasis on racial equality in the American Bahá'í community, a legacy begun most prominently by Hand of the Cause of God Louis Gregory, and carried on to this

day by a multitude of dedicated souls who have rendered such amazing service to the Bahá'í Faith and to society at large.

In this issue, we will briefly recount the life stories of Dr. Robert Hayden—who, as I mentioned, was a member of the Local Assembly when I declared my faith in Bahá'u'lláh—and Dr. Magdalene Carney, who joined that same community in 1962, having been taught the Faith by Sarah Pereira, then Professor of Romance Languages at Tennessee State University.

Dr. Robert E. Hayden (1913–1980)

It is with no small amount of irony that we might characterize Hayden as either "Bahá'í poet" or "African-American poet"—indeed, as the first African-American poet laureate of the United States—before we first classify him simply as a poet, since he disliked the idea of being a "hyphenated" poet. He received no small amount of criticism for not allowing himself to be classified by some narrower identity. "I object to strict definitions of what a poet is or should be," he maintained. "We're living in a time when individuality is threatened by a kind of mechanizing anonymity, and by regimentation" (quoted in Hatcher, *From the Auroral Darkness* 74).

The fact is, however, that by the end of his all-too-brief life, he had become celebrated by both the African American community and by the Bahá'í community for his outstanding capacity as an artist, unrelenting courage as a man,

and steadfast devotion to his beliefs as a Bahá'í. Among his most widely acclaimed poems alluding to the historical plight of African Americans are "Middle Passage"—a poetic rendering of the *Amistad* affair—his paean sonnet "Frederick Douglass," and "Runagate Runagate," a tribute to Harriet Tubman. Likewise, his poems "The Prophet," "Bahá'u'lláh in the Garden of Ridván," and "The Dawnbreaker" are possibly the best poems about the Faith that have yet been penned.

Raised in the Detroit ghetto (ironically known as "Paradise Valley"), Hayden was from his youth entranced by language, poetry, and the concepts of justice, freedom, and identity. After working with other major writers as part of the Federal Writers' Project in 1938, he married concert pianist and composer Erma Inez Morris in 1940, and the next year he enrolled at the University of Michigan, where he studied under heralded English poet W. H. Auden.

It was during this time that both Robert and Erma became acquainted with the Bahá'í Faith, becoming members prior to moving in 1946 to Nashville, where Hayden taught English literature at Fisk University. As part of the growing Nashville Bahá'í community, both Robert and Erma were active in Bahá'í activities. Hayden concentrated on his heavy teaching load and on writing poetry whenever he could, and Erma assumed the position of supervisor of music for Nashville public schools.

Rejecting the tension imposed on him by the rising pressure among

African-American writers and artists to focus his poetic gifts on becoming politically active, Hayden was widely criticized for rejecting what he considered the constricting label of "Black poet." But around this same time, in 1966, he achieved global acclaim by winning the Grand Prize for Poetry at the first World Festival of Negro Arts held in Dakar, Senegal, for his collection of verse *Ballad of Remembrance*.

From this point forward, his career ascended. He published a succession of well-received volumes of verse, and in 1967 he recorded his poems for the Library of Congress and was appointed poetry editor of the Bahá'í magazine *World Order*. That summer, he was appointed poet-in-residence at Indiana State University, and in 1968, visiting professor of English at the University of Michigan. In 1969, he served as the Bigham Professor at the University of Louisville, and that summer as visiting poet at the University of Washington. In 1975, Hayden received the Academy of American Poets Fellowship, and he topped off the decade by being offered a professorship at the University of Michigan, shortly after which he was first offered the position of poet laureate, a position he accepted in 1977 and for which he was reappointed in 1978. In the meantime, he was also awarded honorary doctorates at Brown University in 1976 and at Fisk in 1978.

It was during the last year of his tenure as poet laureate in Washington, D.C., that Hayden began to feel ill. Upon his return to Ann Arbor, Michigan, he discovered he had contracted cancer. In February of 1980 he died, but not before the department of African-American Studies at the University of Michigan paid tribute to the contribution he had made to the field, an honor he treasured above all others because it helped vindicate the difficult stand he had taken in the 1960s and afterward by refusing to make his poems polemical or to cater to the demands of what he called "the minotaurs of edict,"[1] the "monsters of abstraction" that "police and threaten us."[2]

There is much more one could say about his life and his art, something that a number of fine scholars are currently undertaking. My own work *From the Auroral Darkness* (George Ronald 1984) has recently been succeeded by Derik Smith, Associate Professor of English at Claremont McKenna College, who in 2018 published *Robert Hayden in Verse* with the prestigious University of Michigan Press, a highly praised book that won the 2019 College Language Association Book Award.

Hayden's poetry continues to be studied and anthologized, especially in college texts. For example, "Those Winter Sundays," his touching and memorable tribute to the love his foster father bestowed on him, is one of the most anthologized poems of the twentieth century.

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1   From Hayden's "Ballad of Remembrance" in *A Ballad of Remembrance*.
2   From Hayden's "In the Mourning Time" in *Words in the Mourning Time*.

Finally, as I note in my own study of his life and art, his wife Erma was seen by the Bahá'í community as intimately involved in the Faith on the local and national level, while Hayden seemed isolated, laboring at home in his austere profession as poet. And yet, as I also point out, he has doubtless attracted more people to study the Bahá'í Faith than he would have had he dedicated his days to the usual activities meant to teach the Faith, rather than laboring away at searching out precisely the best, the most exact words to fashion the verses he left behind.

DR. MAGDALENE M. CARNEY
(1929–1991)

Like Robert Hayden, Magdalene Carney rose from a most unlikely beginning to bloom like a sunflower emerging tall and bright in an untended field. I met her when she first became a Bahá'í, in the Nashville community in 1962, after having been introduced to the Faith by Dr. Sarah Pereira. Upon being given a pamphlet about the Bahá'í teachings, she knew immediately she had discovered the path by which she could channel her plentiful talents and achieve her lifelong objectives as an educator and a dedicated servant to humankind.

My immediate impression of her—shared by so many who met her—was that this was one of the most authentic human beings I would ever encounter. She was a loving person, a light in the darkness, neither shy nor restrained. One sensed that she knew exactly what she was doing and that by emulating her, one would always be on the right track, whatever the task at hand. In short, she was her own person, sure of herself, but never prideful or remote or disdainful of anyone who came to her for assistance.

The eldest of eight children, "Mag" (as she liked to be called) grew up on a farm where she labored and where she was expected by her parents to set an example for her brothers and sisters. And early on she knew that the most important manner in which she could excel at this task, help her parents emerge from dire poverty, and possibly pursue other objectives they had instilled in her, was to pursue education as far as it would take her.

Because she was descended from slaves who had no such opportunity, she viewed education not only as a means by which she could make a difference, but as a mandate whereby she could serve her family and—as her life proceeded apace—humankind as a whole, focusing particularly on disenfranchised African American women.

So it was that she excelled in her studies, graduating magna cum laude from Tennessee State University in Nashville, then receiving her MA degree from the highly regarded George Peabody College in Nashville, majoring in English and Education.

She remained in Nashville for the next fifteen years (1967–1982), teaching in the public schools and supervising student teachers. And it was during this era of the Civil Rights Movement that Mag was awarded a Ford Foundation Fellowship in Educational

Leadership for her work leading and organizing a nonviolent desegregation of the public school system in Canton, Mississippi. Using the funds she received from this award, she went to the University of Massachusetts, where she earned her doctorate in education.

Firm in a conviction she already had, but that was confirmed and enhanced by her study of the Bahá'í Writings, Carney believed that racial prejudice, indeed prejudice of any kind, was an emotional commitment to a false understanding of reality. Consequently, she taught that preventing or treating prejudice could only be accomplished by first gaining access to both the minds and hearts of others and then re-educating both.

Because the motive force and bulwark in all these accomplishments was her in-depth understanding of and unstinting devotion to the Bahá'í Faith, she was a stalwart and effective Bahá'í teacher. Her charisma and the magnetism of her remarkable smile and even more remarkable character were irresistible.

In 1970, she was elected to the National Spiritual Assembly of the Bahá'ís of the United States, and she was re-elected successively for the following thirteen years, until she was appointed to serve at the Bahá'í World Centre in Haifa, Israel, as a Counsellor with the International Teaching Centre. From this time on, until her death in Haifa in 1991, she traveled to Africa, Europe, and various island nations where she imbued the members of every community she touched with the desire to excel in every aspect of their lives, encouraging the spiritual, moral, social, and intellectual development of growing Bahá'í communities. She participated in the United Nations World Conference on Women in Kenya in 1985 and gave a keynote speech for the European Bahá'í Women's Conference in the Netherlands in 1989, two years before her passing.

As one of the many tributes to her spirit and legacy, the National Spiritual Assembly of the United States established the Magdalene Carney Bahá'í Institute in West Palm Beach, Florida, which today is utilized as a teaching center for courses on the Bahá'í Faith and as a training center.

My most lasting personal memory of Mag will always be a conversation I had with her at a Bahá'í summer school in Florida. I had for a long while stewed over a dilemma resulting from a major decision I had to make regarding my life and career. I presented her as honestly as I knew how the pros and cons of the two options I had, as well as the consternation and turmoil that having to make a decision was causing me. Her response was as helpful as it was timely and terse: "Just choose one and do it!" she said firmly. It was exactly what I needed to hear.

You might also like to read. . .

As a service to our readers, we are including the hyperlinks to articles related to the subjects presented in this issue. These are articles that have been previously published in the *Journal* and are available for free on our website.

While any article dealing with the relationality between a field of study and the Bahá'í teachings might be considered relevant to the overall theme of this issue—the unity or harmony of science and religion—we have included below only those articles that are focused rather pointedly on the subject itself, rather than how the concept can be applied. Please take advantage of this service and this special opportunity to examine the considered discourses these articles contain, representing, as they do, more than thirty years of Bahá'í thought on the subject of science and religion. We have listed them in reverse chronological order.

"In Pursuit of Harmony between Science and Religion" by Paul Lample. Vol. 26, no. 4 (2016)
The capacity to unite in the investigation of truth for the advancement of civilization requires the harmony of science and religion, in which, as 'Abdu'l-Bahá explains, science is freed from materialism and religion from superstition. This paper looks at how Bahá'ís might understand and increasingly contribute to the effectuation of this principle through action and involvement in

contemporary discourse.
doi: 10.31581/JBS-26.4.4(2016)

"Articulating a Consultative Epistemology: Toward a Reconciliation of Truth and Relativism" by Todd Smith and Michael Karlberg. Vol. 19, no. 1-4 (2009)
The field of epistemology has been characterized by a perennial tension between two broadly contrasting approaches to knowledge—one associated with the search for foundational truth, the other associated with assertions regarding the relativity of truth. This paper resolves this tension within the framework of a consultative epistemology. This epistemological framework demonstrates and explores the relativity of the social construction of truth, and in so doing, resolves the paradoxical truth claim, associated with relativist approaches to knowledge, that there are no universally valid truths.
doi: 10.31581/JBS-19.1-4.3(2009)

"Religion and Evolution Reconciled: 'Abdu'l-Bahá's Comments on Evolution" by Courosh Mehanian and Stephen Friberg Vol. 13, no. 1-4 (2003)
The harmony of science and religion is a central teaching of the Bahá'í Faith that has important implications for the development of society and the emergence of a global civilization. Science and religion, "the two most potent forces in human life," have often been at odds, most notably over evolution and the origins of man. 'Abdu'l-Bahá has commented at length on evolution and

man's origins, providing the most extensive exploration of the harmony of science and religion in the Bahá'í canon. doi: 10.31581/JBS-13.1-4.3(2003)

"A Scientific Proof of the Existence of God" by William S. Hatcher. Vol. 5, no. 4 (1994)
In 1921 'Abdu'l-Bahá presented a cogent scientific argument for the existence of an objective, unseen force as the only reasonable explanation for the phenomenon of biological evolution. In the years since 'Abdu'l-Bahá's proof was first published, the findings of science have tended to show that, indeed, the phenomenon of evolution represents a persistent movement from disorder towards order of the kind that strongly suggests the action of some unobservable force different from all other forces so far discovered.
doi: 10.31581/JBS-5.4.1(1993)

"Harmony of Science and Religion; A Complementarity Perspective" by G.A. Bartholomew. Vol. 1, no. 3 (1989)
The principle of complementarity, first invoked to account for certain phenomena in quantum mechanics, is reviewed as an aid in understanding the nature of the harmony between science and religion. The close affinity between this principle and 'Abdu'l-Baha's views concerning internal and external reality is explored, and the support the principle lends the Bahá'í tenets concerning the unity of mankind and the oneness of religion is outlined.
doi: 10.31581/JBS-1.3.1(1989)

"Scholarship and the Bahá'í Community" by Moojan Momen. Vol. 1, no. 1 (1988)
Every Bahá'í who surveys the vast range of doctrines and concepts enshrined in the holy writings of the Bahá'í Faith or whose imagination is captured by the intensity of its brief history must, to some extent, be inspired to make a more thorough study of some aspect that interests him or her. To some is given the good fortune to have both the opportunity and inclination to put this study on a more formal basis. Whether this be at an institute of learning or through private study and research, there are many areas of the teachings and history of the Bahá'í Faith that invite painstaking research and thoughtful analysis. Such study is of great benefit to the Bahá'í community as a whole, quite apart from the immense satisfaction that it can bring to the individual student. There are also dangers in such study, particularly for the individual concerned, and often the extent of this danger is not appreciated by someone just setting out on such a course of study.
doi: 10.31581/JBS-1.1.4(1988)

Dr. Robert E. Hayden

Science and Religion in Dynamic Interplay[1]

TODD SMITH

Abstract

This paper proposes an approach to conceptualizing and contributing to the harmony of science and religion. In an effort to find points of unity that can serve as a basis upon which to advance the discourse on the subject, it begins by considering some of the legitimate concerns many thinkers have with religion and correlating them with the teachings of the Bahá'í Faith. With these correlations in mind, it then describes how it may be fruitful to think about both science and religion as viable sources of knowledge in their own right. Based on these descriptions, the balance of the paper focuses on three ways in which science and religion can be understood to complement each other: how they supplement each other, how they correspond to each other, and how they cultivate each other. Within this framework, a series of propositions are adduced for further inquiry.

Résumé

L'auteur de ce document propose une approche permettant de conceptualiser l'harmonie entre la science et la religion et de contribuer à sa réalisation. Afin de cerner des points de convergence pouvant servir de base pour faire avancer le discours sur le sujet, l'auteur commence par examiner certaines des préoccupations légitimes que de nombreux penseurs ont à l'égard de la religion, puis il met celles-ci en corrélation avec les enseignements de la foi bahá'íe. En gardant ces corrélations à l'esprit, l'auteur décrit en quoi il peut être profitable de considérer la science et la religion comme étant toutes deux des sources de connaissances viables. Sur la base de ces descriptions, l'auteur s'attarde ensuite sur trois façons dont la science et la religion peuvent être vues comme complémentaires l'une de l'autre : comment elles se suppléent, se correspondent et s'enrichissent mutuellement. Dans ce cadre, une série de propositions sont présentées aux fins d'un examen plus approfondi.

Resumen

Este artículo propone un enfoque para conceptualizar y contribuir a la armonía de la ciencia y la religión. En un esfuerzo por encontrar puntos de unidad que puedan servir como base sobre la cual avanzar el discurso sobre el tema, comienza considerando algunas de las preocupaciones legítimas que muchos pensadores tienen con la religión y correlacionándolas con las enseñanzas de la Fe Bahá'í. Con estas correlaciones en mente, describe cómo puede ser fructífero pensar tanto en la ciencia como en la religión como fuentes viables de conocimiento por derecho propio. Con base en estas descripciones, el resto del documento se centra en tres formas en que la ciencia y la religión pueden entend-

erse para complementarse entre sí: cómo se cumplen; cómo se corresponden entre sí; y cómo se cultivan mutuamente. Dentro de este marco de referencia, se presentan una serie de proposiciones para consultas adicionales.

In his Hasan M. Balyuzi Lecture presented at the fortieth annual conference of the Association for Bahá'í Studies, Farzam Arbab argues that "[a] rigorous process of inquiry is needed to understand the nature of harmony between science and religion and the ways in which they complement each other in the civilization-building process" ("Intellectual Life" 19). He continues by underscoring that "the more attention we give to such an inquiry, and the sooner we begin doing so, the greater the progress we will achieve in the development of the intellectual life of the community" (19). This paper is an attempt to contribute to this process of inquiry and proposes the following approach to conceptualizing the ways in which science and religion complement each other.

The proposed approach is to first reflect on why it is that many are disaffected with religion and see it as being in conflict with science and devoid of value; to next articulate working—but not rigid—descriptions of both science and religion as "systems of knowledge and practice" (Universal House of Justice, 2 March 2013); and to then posit various ways in which science and religion, as articulated, are complementary. Here, the specific proposal is to consider how science and religion

supplement (add to, compensate for, make up for the limitations of) each other, how they *correspond to* (reflect, overlap with, converge with, interface with) each other, and how they *cultivate* (nourish, fortify) each other while also contributing to the generation of knowledge and the betterment of humankind in their respective spheres. This last part is divided into two sections: how religion cultivates the development of science, and how science cultivates the development of religion.

In developing this approach, a series of propositions are advanced as suggested points of departure for further inquiry. No claim is made that any of these hypotheses are fully addressed or validated in this paper. There is not, for example, enough space to examine the relevant contributions of many authors who have taken up at least some of these matters. Rather, the main objective in advancing these propositions is to provide an outline of what the overall approach to understanding the harmony of science and religion could entail in light of the writings of the Bahá'í Faith, and how such an approach could help to address many of the criticisms that are legitimately raised by various proponents of materialism, among other thinkers.

Shoghi Effendi envisions that in a united world, "science and religion, the two most potent forces in human life, will be reconciled, will cooperate, and will harmoniously develop" (*World Order* 204). The central conviction informing this paper is that the relationship between science and religion

in their true forms can be understood to consist of a unity in diversity of investigation and application. In other words, these two systems of knowledge are in dynamic interplay with each other, they sustain each other, and they serve as evolving reference points for each other while also pursuing their distinct agendas. One can think in terms of Hans-Georg Gadamer's concept of the "fusion of horizons," where different systems of knowledge mature through an ongoing interchange that challenges their respective preconceptions, opens up new vistas of understanding, and thereby leads to their reciprocal enrichment without necessarily compromising that which is core to each of them.

The Disaffection with Religion

In an effort to articulate the dynamic relationship between science and religion, and in line with Shoghi Effendi's admonition that we be "able to discuss intelligently, intellectually, the present condition of the world and its problems," it is important to consider how the teachings of the Bahá'í Faith correlate with "the current thoughts of the leaders of society" (*Compilation* no. 400)—to find points of unity that can form a basis upon which to advance the discourse on this topic. With this in mind, this section considers some of the critical thinking within the Western tradition pertaining to religion itself under the subheadings "Some Critical Concepts of Religion," "Understanding the Criticism of Religion," and "Making Sense of Humanity's Ills." It

is anticipated that further research on this topic, and indeed on the subject of the harmony of science and religion more specifically, will benefit enormously from considering insights from Eastern and other traditions as well.

Some Critical Concepts of Religion

In October 1999, author Salman Rushdie published an article, "Imagine There's No Heaven," just as the population of the world was reaching six billion people. He addressed it specifically to the six-billionth world citizen, warning the child about the dangers of religion. It is worth quoting a few sentences from his article as they clearly encapsulate some of the thinking about religion today:

> Living religions . . . will be called the heart of your culture, even of your individual identity.
>
> It is possible that they may at some point come to feel inescapable, not in the way that the truth is inescapable, but in the way that a jail is.
>
> As human knowledge has grown, it has also become plain that every religious story ever told about how we got here is quite simply wrong. This, finally, is what all religions have in common. They didn't get it right.
>
> To choose unbelief is to choose mind over dogma, to trust in our humanity instead of all these dangerous divinities.

Only you can decide if you want to be handed down the law by priests, and accept that good and evil are somehow external to ourselves.

Since the dawn of the Enlightenment, and particularly since the rise of the *philosophes* such as Voltaire and Diderot, there has been an increasing disaffection with religion, especially among social thinkers. Many have come to see religion as detrimental, delusional, or both, as Rushdie describes it. Perhaps the most famous claim along these lines is Karl Marx's assertion that religion "is the *opium* of the people" (115), although his project is not so much concerned with addressing the problem of religion head on. Instead, he is intent on overturning the capitalist mode of production in which religion plays the ameliorative role of sustaining the proletariat and giving meaning to their lives in the face of exploitative and alienating conditions. As far as he is concerned, once capitalism gives way to communism, as is humanity's destiny, religion, "the sigh of the oppressed creature" (115), will lose its grip on human consciousness.

A host of other thinkers have criticized religion or defined it in terms alien to those who view themselves as religious. One of the more well-known among them is Ludwig Feuerbach, Marx's predecessor, who denies the existence of God and describes Him in anthropomorphic terms as nothing more than the projection of our idealized selves writ large.[2] Another one is Friedrich Nietzsche, who despises what he sees as the herd mentality that humanity has fallen into and blames the Judeo-Christian tradition for giving birth to, and propagating, a slave morality inimical to human flourishing—a morality which must, therefore, be surpassed. Similarly, Soren Kierkegaard, a contemporary of Feuerbach, in his determination to in fact revitalize Christianity, argues that Christianity has become ritualized and superficial, is devoid of passion, commitment, and true faith, and thus suckles the mediocrity that one finds in every corner of society. He would have agreed wholeheartedly with the following passage where Shoghi Effendi quotes an American Presbyterian minister lamenting the state of the church: "If Christianity wishes and expects to serve the world in the present crisis, . . . it must 'cut back through Christianity to Christ, back through the centuries-old religion about Jesus to the original religion of Jesus'" (*World Order* 184).

More recent thinkers include the sociologist Peter Berger, who begins with the notion that humans are by nature unfinished beings. We have no species-specific essence, so we go about "finishing" ourselves by socially constructing our reality. In creating

2   An updated version of this theory is Nancy Ellen Abrams's view that God emerges out of human consciousness. As Paul Lample explains, she holds that the concept of God enables humanity "to establish unity and cooperation on a global scale" (42).

and assigning meaning to our world and the phenomena within it, we compensate for our essential deficiencies. But we also conceal this process from ourselves, for otherwise we risk having to come to terms with the inessentiality and tenuousness of the way things are, the prospect of which is incredibly disconcerting. That is, we risk placing ourselves in a state of anomie.

To illustrate, Berger says that "[i]f one imagines oneself as a fully aware founder of a society, a kind of combination of Moses and Machiavelli, one could ask oneself the following question: How can the future continuation of the institutional order, now established *ex nihilo*, be best ensured?" (33). One could employ all the power at one's disposal, but there "still remains" what he calls "the problem of legitimation, all the more urgent because of the novelty and thus highly conscious precariousness of the new order" (33). The solution, Berger says, is religion, because it "legitimates social institutions by bestowing upon them an ultimately valid ontological status, that is, by *locating* them within a sacred and cosmic frame of reference" (33).

Others take a darker view of religion and argue, as Rushdie does, for its eradication. For neo-Darwinists such as Jerry A. Coyne, Richard Dawkins, Daniel C. Dennett, and Christopher Hitchens, religion has no redeeming value. In the first place, it is irrational, has no basis in logic or reality, and is antithetical to science generally and evolutionary theory specifically. In the second place, it is the source of

fanaticism and the cause of much of the needless suffering that afflicts humanity. There are, additionally, a host of other reasons why they believe religion is defective—including, in their view, inadequate proofs for the existence of God, religion's inability to explain evil and suffering, and so on—but suffice it to say that, for them, there would be nothing better than for religion to wither away and die in order to clear the path, once and for all, for science, or secular, rational thought more generally, to lead humanity to a brighter future.[3]

UNDERSTANDING THE CRITICISM OF RELIGION

Obviously, the Bahá'í view of religion is very different and has much to say about how such critical views are constrained by materialist assumptions,[4] some of which are discussed below. At the same time, denunciations of religion are surely understandable given what has been done in its name. As the House of Justice explains, "The rigid intolerance exhibited in the past by much of organized religion, together with the domination of scholarship long exercised by theological elites,

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3   For an overview of additional reasons why some dispute the harmony between science and religion, see John Hatcher's introduction to *One Reality: The Harmony of Science and Religion* (Taylor and Hatcher).

4   For additional views on how religion has been perceived, see Lample (38–42).

could not but arouse strong negative reactions" (20 July 1977).

Indeed, a number of social phenomena, when studied on their own, support the conclusion that religion is problematic, if not dangerous or bankrupt. Among these are the following six.[5] First, the increasing awareness throughout the world of the existence of a variety of expressions of, and perspectives on, religion, which has naturally raised legitimate questions about what constitutes a viable guide to life. Second, the perception that religious beliefs fall short of addressing the practical and moral issues of today, and that there is accordingly an unresolvable mismatch between religion and modernity (or postmodernity) that renders the former anachronistic. Third, the conspicuous differences and antipathy between many religious communities and factions, notwithstanding the efforts of some to promote tolerance and pluralism. Fourth, the unseemly conduct of various religious leaders and institutions. Fifth, the horrid violence and destruction carried out in the name of religion by some fanatical groups. And sixth, the distortion of the central tenets of the various world religions by leaders who cling tenaciously to their orthodoxies, impose their interpretations on their congregations, and thus stifle the independent investigation of truth while concurrently sanctioning dogmatism, superstition, and factionalism.

Bahá'ís certainly agree that religion can be problematic in these ways and that, when so, we are better off without it. Regarding the first two social phenomena, Shoghi Effendi states that "[i]f long-cherished ideals and time-honored institutions, if certain social assumptions and religious formulae have ceased to promote the welfare of the generality of mankind . . . let them be swept away and relegated to the limbo of obsolescent and forgotten doctrines" (*World Order* 42). As to the third, fourth, and fifth, one is reminded of 'Abdu'l-Bahá's warning "that religion must be the source of fellowship, the cause of unity and the nearness of God to man. If it rouses hatred and strife, it is evident that absence of religion is preferable and an irreligious man better than one who professes it" (*Promulgation* 181). And concerning the sixth, Paul Lample explains: "When the teachings of religion are distorted in this way, religions depart from what is true, what is good, and what is right, to become the imposition of ideology and the exercise of power over others" (26). Bahá'u'lláh Himself warns of this phenomenon as it relates to recognizing the Manifestation of God. In the Kitáb-i-Íqán, He states:

> Leaders of religion, in every age, have hindered their people from attaining the shores of eternal salvation, inasmuch as they held the reins of authority in their mighty grasp. Some for the lust of leadership, others through

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5   One can find such themes in *One Common Faith* and the message of the Universal House of Justice to the world's religious leaders dated April 2002.

want of knowledge and understanding, have been the cause of the deprivation of the people. (15)

Making Sense of Humanity's Ills

Such criticisms of religion can be understood as part of a larger effort to make sense of the social ills that currently plague humanity—a humanity that, from a Bahá'í perspective, is not yet attuned to the spiritual springtime that has taken root with the Revelation of Bahá'u'lláh. One might argue that the abovementioned critics and others (unwittingly) offer valuable insights into humanity's spiritual decline (and, more recently, into the forces of disintegration currently at work in the world today), when the divine impulse of the previous Revelation is exhausted, moral vitality and social cohesion are everywhere diminished, religion as practiced "loses its relevance" (Bahá'í International Community 26), and "uncertainty about the meaning and value of life generates anxiety and confusion" (26–27). From this vantage point—one shared by many proponents of materialism and neo-Darwinism, among other thinkers—religion has done little, if anything, to lift humanity out of its current plight.

Consistent with the writings of the Bahá'í Faith, many have also claimed that humanity is rife with social disease pernicious to the human condition. Notably, these include some of the influential thinkers mentioned above who lived during the lifetimes of the Báb and Bahá'u'lláh. The early Marx, for

example, condemns the capitalist mode of production for promoting increasing specialization and the mindless repetition of gradually simplified, mechanized tasks. Within this mode, he argues, the individual becomes alienated from the production process, from the product itself, from his or her fellow workers, and finally, from his or her creative self—all forms of fragmentation. Most atrophy under such conditions; rarely do they exceed mediocrity.

Nietzsche despises such mediocrity and vigorously promulgates the affirmation of life in the face of what he perceives to be a nihilistic society. He loathes conformity, ordinariness, and the totalizing theories that justify them. He derides entities like the modern state "where everyone, good and bad, is a poison drinker: the state where everyone, good and bad, loses himself: the state where universal slow suicide is called—life" (*Zarathustra* 77). Instead, Nietzsche venerates the free spirit, the one able to devise his or her own path. He reveres the one who can create, the constructor who can cut free from the shackles of normalness, the anti-superfluous one. Where Nietzsche strays, at least from a Bahá'í perspective, is with his extreme individualism, his rejection of the existence of God, and his repudiation of anything that purports to transcend a dynamic relationship with the earth and the will to power that permeates every element and being (a positive, creative force, in his mind). This worldview is part of Nietzsche's response to the cultural sickness he saw around him which, as

Raymond Geuss explains, he judged in a similar way to a host of other thinkers:

> The diagnosis was that life in the modern world lacks a kind of unity, coherence, and meaningfulness that life in previous societies possessed. Modern individuals have developed their talents and powers in an overspecialized, one-sided way; their lives and personalities are fragmented, not integrated, and they lack the ability to identify with their society in a natural way and play the role assigned to them in the world wholeheartedly. They cannot see the lives they lead as meaningful and good. Schiller, Hölderlin, Hegel, Marx, Wagner, Nietzsche (and many other lesser-known figures) all accept versions of this general diagnosis. (49)

So does Kierkegaard. In his words: "The present age is essentially *a sensible, reflecting age, devoid of passion, flaring up in superficial, short-lived enthusiasm and prudently relaxing in indolence*" (252).

In short, for these thinkers, alienation, complacency, averageness, cynicism, despair, and a herd mentality are the norm, perhaps interspersed with fleeting bursts of zeal. One sees clear similarities with Shoghi Effendi's assessment of the state of the world:

> Sore-tried and disillusioned, humanity has no doubt lost its orientation, and would seem to have lost as well its faith and hope. It is hovering, unshepherded and visionless, on the brink of disaster. A sense of fatality seems to pervade it. An ever-deepening gloom is settling on its fortunes as it recedes further and further from the outer fringes of the darkest zone of its agitated life and penetrates its very heart. (*World Order* 190)

Similar concerns have also been raised in the twentieth and twenty-first centuries, producing a wealth of thoughtful analyses, some features of which likewise correlate well with assessments found in the writings of the Bahá'í Faith. Georg Simmel argues that with the emergence of modern urban society—which, in certain respects, has been positive—people have become more aloof and indifferent, adopting a blasé attitude that has been exacerbated by the leveling culture of money that pervades the metropolis and causes human beings to see each other in terms of their rational utility. Max Weber maintains that a process of rationalization has come to permeate and regulate every aspect of our lives, resulting in an iron cage from which there is no real escape—that is, a world dominated by efficiency, order, and calculability, and one bereft of meaning, moral direction, and any sense of the mystical (Kalberg). Hannah Arendt claims that we have become mechanical creatures due to bureaucratic administration, technological leveling, and scientism, which includes the view that human

beings can be fully understood in physical and natural terms alone. We, moreover, spend the bulk of our time in "labor" (taking care of our biological needs) rather than "work" (producing enduring artifacts) and "action" (participating in meaningful political discourse), the latter of which promotes our "natality"—the ever-present possibility for each individual to offer the world something new and unexpected. Others, such as Ulrich Beck, see us as troubled by the notion that we have, through our science and technology, created unprecedented global risks, and as being paralyzed in the face of potential crises: nothing seems fixed to us anymore; all seems uncertain and insecure. Charles Taylor, moreover, sees this anxiety, torpor, and longing for a motivating pattern of life as tied to the growing disenchantment with the world—the sense that life is now devoid of spiritual or mystical significance—a phenomenon first recognized by the Romantics, and one that is correlated with the rise of instrumental reason, which has produced fragmentation among humans in three fundamental ways: "within themselves, between themselves, and from the natural world" (94). And the list goes on—to say nothing, for example, of the legitimate preoccupation that many theorists have with the culture of contest and conflict, the tribalism, the worsening state of the environment, the resurgence of overt forms of prejudice, the palpable disparity between the rich and the poor, the displacement of populations, and

the deadening effects of consumerism that are everywhere apparent.[6]

This is not to deny that humanity has progressed in many ways. Thinkers such as Johan Norberg, Steven Pinker, and Hans Rosling have all reasonably argued that life is much better for us now than it was in the past when one considers such factors as overall health, life expectancy, equality, and human rights. It is also not to deny that the spiritual impulse can endure in the face of the forces of fragmentation, contest, consumerism, and the like that work to undercut it.[7] Yet, these qualifications notwithstanding, it seems reasonable to conclude that the forces of fragmentation and the turmoil that attends it exert a powerful sway over our psyches today, that they disempower us, and that, we might add, consumerism itself, not religion, has become the "opium to the human soul" (Universal House of Justice, 2 March 2013).[8] Indeed, it is not much of a stretch to suggest that many would sympathize with the following assessment by the House of Justice regarding the despair that currently vexes human consciousness: "Ill-equipped to interpret the social commotion at

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6   A few examples of such thinkers are Paul Hanley, Naomi Klein, Herbert Marcuse, and Pankaj Mishra.

7   *One Common Faith* describes how the spiritual impulse is resurging in a diversity of forms (5–6).

8   This analysis does not consider the culture of contest that Michael Karlberg (*Beyond*) analyzes or the extensive conflict that exists owing to the fragmented mindset.

play throughout the planet, they listen to the pundits of error and sink deeper into a slough of despond. Troubled by forecasts of doom, they do battle with the phantoms of a wrongly informed imagination" (Riḍván 1999). Within such a perplexing culture, we obfuscate our true potential to achieve lofty heights as a species. We participate in a moribund order and perpetuate a way of being that "is weary for want of a pattern of life to which to aspire" (Universal House of Justice, Riḍván 2012).

Working Descriptions of Religion and Science

The aim thus far has been to provide insights into why many repudiate religion and to consider why their criticisms are, in many cases, a reasonable reaction to the state that religion has apparently fallen into and its seeming impotency to grapple with the ills afflicting the world. More than that, the aim has been to identify a number of points of unity, or correlations between such criticisms and the teachings of the Bahá'í Faith, which can serve as a common foundation upon which to further explore the relationship between science and religion. Hopefully, the foregoing has been helpful in this regard, although many other criticisms have not been addressed such as some of the more scientific and philosophical ones pertaining to evolution, proofs of the existence of God, the problem of evil, and the suffering of innocents.

Having established a number of correlations as a foundation, the next step is to offer an account of how to think about religion and science. The proposition here is that while it makes sense to question the harmony between science and religion in view of the observations about religion discussed above, these observations invariably miss the mark because they are premised on a misunderstanding of what religion truly is. In other words, the criticisms raised by materialists and others are admittedly germane and understandable insofar as they expose veritable failings of religion as currently practiced in many settings. However, as 'Abdu'l-Bahá states, Bahá'u'lláh has "reconciled science with religion by revealing the pure teachings of the divine reality" (*Promulgation* 231).

Drawing on the Bahá'í writings, what follows, therefore, is an attempt to outline some of the core features of religion, albeit without claiming they add up to an actual definition of religion. Also briefly considered are some of the predominant features of science. It is proposed that with these features in mind, we can more readily explore how to approach the relationship between these two systems of knowledge and practice.[9]

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9   In taking this approach, it is recognized that the nature of religion and the nature of science are vast subjects on their own that have received sustained attention within various fields of study. It is impossible to engage with the plethora of theories pertaining to each in this paper. For interested readers, good places to start

RELIGION[10]

As stated by Bahá'u'lláh, the purpose of religion is twofold: "The first is to liberate the children of men from the darkness of ignorance, and guide them to the light of true understanding. The second is to ensure the peace and tranquillity of mankind and provide all the means by which they can be established" (*Gleanings* 34:5). Religion is the motivating impulse that impels both individual and social advancement.

Specifically, religion is the primary agent of the spiritual development of humankind (*One Common Faith* 13). It is the means by which each of us is able to "know his Creator and to attain His presence" (Bahá'u'lláh, *Gleanings* 29:1)—the very purpose of life—although, owing to our human limitations, we can never know the *essence* of God, but only His attributes, His signs, and His names. Further, within every one of us resides the essence of God's light. Religion refines our inner vision so that "we may perceive the glory of God" ('Abdu'l-Bahá, *Promulgation* 90) and obtain reunion with Him—the longing of every human soul.

There is only one God and knowledge of Him is made possible by recognizing His Manifestations and adhering to Their teachings. Through Their Revelations, "all the names and attributes of God, such as knowledge and power, sovereignty and dominion, mercy and wisdom, glory, bounty, and grace, are made manifest" (Bahá'u'lláh, *Gleanings* 19:3). By turning to these Manifestations and putting Their teachings into practice, we become empowered to fulfill our evolving responsibilities and develop our corresponding requisite capacities, which otherwise remain latent, inert, or stunted. The object of every Revelation "is to effect a transformation in the whole character of mankind, a transformation that shall manifest itself, both outwardly and inwardly, that shall affect both its inner life and external conditions" (Bahá'u'lláh, *Kitáb-i-Íqán* 169). When religion is "faithful to the spirit and example of the transcendent Figures," it awakens "in whole populations capacities to love, to forgive, to create, to dare greatly, to overcome prejudice, to sacrifice for the common good and to discipline the impulses of animal instinct" (Universal House of Justice, April 2002). Such religion "reaches to the roots of motivation." On the other hand, "whenever religious practice veers too far from this revelatory impulse, the tares of superstition, of idle fancies and vain imaginings take root in human hearts" (Lample 45).

There is in truth only one religion of God with the Message of each Manifestation revealing "a stage in the limitless unfolding of a single Reality" (*One Common Faith* 22), identified by Bahá'u'lláh as "the changeless Faith of

include Benjamin Schewel's *Seven Ways of Looking at Religion: The Major Narratives* and Peter Godfrey-Smith's *Theory and Reality: An Introduction to the Philosophy of Science*.

10   Lample also offers an outline of true religion. Many of his points have been incorporated into this section.

God, eternal in the past, eternal in the future" (*Gleanings* 70:2). Each stage in this process of Progressive Revelation constitutes "'the City of God,' a source of knowledge that totally embraces consciousness" (*One Common Faith* 13), and is imbued with such potency as to endow the seeker with "a new eye, a new ear, a new heart, and a new mind" (Bahá'u'lláh, *Gleanings* 125:6). Each stage is thus a fulfillment of the Covenant that God has established with humanity whereby He reveals through His Messengers what is required of us to advance. Our role in this Covenant is to recognize His Messengers—these "Daysprings of Mercy" (*Gleanings* 139:2)—when They appear, and to abide by Their ordinances.

Every Revelation infuses new meaning into timeless spiritual truths, but also supplements these truths with social teachings, laws, and ordinances that address the requirements of the age. Together these spiritual and social teachings enable humanity to advance in stages towards the unification of the entire human race, which is "the hallmark of the age of maturity" (Universal House of Justice, 2 March 2013), and which, when achieved within the Dispensation of Bahá'u'lláh, will entail "an organic change in the structure of present-day society, a change such as the world has not yet experienced" (Shoghi Effendi, *World Order* 43). All religions teach us to see service to others as a moral duty, to treat others as we would treat ourselves, to love one another, and to foster peace and unity, and they admonish that if humanity fails to live in accordance with such teachings, it lapses into moral decline. At the same time, because "[e]very age hath its own problem . . . [t]he remedy the world needeth in its present-day afflictions can never be the same as that which a subsequent age may require" (Bahá'u'lláh, *Gleanings* 106:1).

The dual nature of Progressive Revelation is linked to the twofold station of each Manifestation, one being the station of unity, and the other being the station of distinction. Regarding the former, all the Manifestations are to be viewed as "abiding in the same tabernacle, soaring in the same heaven, seated upon the same throne, uttering the same speech, and proclaiming the same Faith" (Bahá'u'lláh, *Gleanings* 22:3). Regarding the latter, the Manifestations appear "clothed in divers attire" owing to Their distinctive missions to help humanity advance in accordance with its capacity at the time of Their appearance.

Finally, the purpose of religion is to learn how to collectively, and systematically, apply the teachings of the latest Manifestation of God for the betterment of humankind. "For the Bahá'í community," Lample states, "the practice of true religion requires growing in capacity over time to translate Bahá'u'lláh's Teachings—His concept of religion—into systematic action as a remedy for the ills afflicting humanity" (50). As Sona Farid-Arbab further explains, religion "is based on revelation but elaborated through a continual process of learning through social interaction" (174).

Science

Science is generally understood as a systematic endeavor that utilizes observation and experiment to study and organize knowledge regarding the nature and behavior of phenomena in the natural world. There is some debate over what, in fact, constitutes science as an enterprise—that is, what demarcates it from other forms of knowledge generation. However, it is relatively safe to say that science typically includes empirical observation, forming questions and hypotheses, deducing observational predictions from those hypotheses, gathering data and testing those predictions, analyzing the data and the experimental results, deriving and sharing conclusions as to the adequacy of the original hypotheses, developing broader theories and models about the phenomena in question that guide further research, and, where possible, advancing explanatory laws of nature. At different stages in the enterprise, various strategies are used, such as induction (drawing general conclusions from specific instances, or drawing generalizations beyond cases observed), abduction (finding the simplest or most likely explanation for a set of observations), deduction[11] (moving from general principles to specific conclusions, or deducing observational predictions from hypotheses), verification (testing to see if a hypothesis is true or justified), and falsification (testing a hypothesis with the objective of trying to refute it). Mathematics also plays a key role in certain scientific fields, serving as the primary tool or language to describe scientific findings.

There are many theories about how science works in practice and the extent to which, and the manner in which, its different tools are actually employed. Philosophers and sociologists of science, for example, raise questions about the relationship between scientific pursuits and social conditions; the power of paradigms, worldviews, language, preconceptions, and context to limit the process of discovery and justification; how systematic science truly is; how objective it truly is; how much of it is grounded in reason and empirical evidence versus intuition, imagination, and other "irrational" sources of inspiration; the extent to which the facts it uncovers are theory laden; whether or not it actually gets at reality as it is in itself (realism) or is simply an effective way of explaining observable phenomena (instrumentalism); and so on. There is no space to deal with these matters here,[12] but some of them are alluded to in the discussion on the harmony of science and religion below. It merits emphasis, however, that from a Bahá'í perspective, science plays a central role in the progress of humanity. According to 'Abdu'l-Bahá,

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11   Deductive logic more specifically deals with patterns of argument in which, for example, if the premises are true, it follows necessarily that the conclusion is true.

12   For a clear overview of many of the issues involved, see Arbab ("An Inquiry" 136–48).

science may be likened to a mirror wherein the infinite forms and images of existing things are revealed and reflected. It is the very foundation of all individual and national development. Without this basis of investigation, development is impossible. Therefore, seek with diligent endeavor the knowledge and attainment of all that lies within the power of this wonderful bestowal. (*Promulgation* 50)

How Science and Religion Complement Each Other

With these features of religion and science in mind, what follows is an attempt to outline how these two systems of knowledge and practice are naturally harmonious—how, that is, they are dynamically related and how each, when divorced from the other, invariably falls into dogmatism and rigidity and becomes diminished in its ability to advance civilization. The specific thesis is that it is fruitful to explore the ways in which science and religion—*understood from this point forward in accordance with how they are articulated above*—complement each other by considering how they variously *supplement*, *correspond to*, and *cultivate* each other while also maintaining their autonomy as distinct areas of endeavor.

It should be acknowledged that this is a massive topic that deserves much more attention than can be given in a paper of this length, particularly in

view of the valuable contributions of many notable thinkers on the subject—such as Ian G. Barbour, Samuel Gregg, Peter Harrison, John Haught, Alister E. McGrath, Nancy Murphy, John Polkinghorne, Jonathan Sacks, and many more—that are not taken into account. As just one example, it would be beneficial to consider how the approach suggested here relates to Barbour's four views of the relationship between science and religion: conflict, independence, dialogue, and integration. Consequently, *what follows should be treated simply as a series of propositions or hypotheses*. It is anticipated that these propositions will be subjected elsewhere to further testing and inquiry that will do much more to correlate the writings of the Bahá'í Faith with relevant current thought. In addition, most of the focus will be on a series of propositions regarding how science and religion cultivate each other, as this seems to be an area that has received little attention in the literature on the subject and is of particular relevance when considering the issues raised by materialists and other critics of religion. Here, a number of *subpropositions are also advanced for further consideration*.

Proposition 1: Science and Religion *Supplement* Each Other

Although there is much to say about this proposition, it will be discussed only briefly because it is already generally accepted among advocates of the

harmony of science and religion at least as far back in the Western tradition as Thomas Aquinas, who argues that humans come to know reality through both the natural light of reason and that of faith (Campbell and Looy, Section 2: Entries). It is further suggested that this proposition is often what is meant when it is argued that science and religion "complement" each other. In this respect, the statement *One Common Faith* provides the following description of the relationship between these two systems of knowledge and practice:

> The one discerns and articulates the values unfolding progressively through Divine revelation; the other is the instrumentality through which the human mind explores and is able to exert its influence ever more precisely over the phenomenal world. The one defines goals that serve the evolutionary process; the other assists in their attainment. Together, they constitute the dual knowledge system impelling the advance of civilization. Each is hailed by the Master as an "effulgence of the Sun of Truth." (33)

To elaborate, each is considered a system of knowledge and practice in its own right. Religion explores the spiritual dimension of reality, often referred to as the Book of Revelation, and science explores the material dimension, often referred to as the Book of Creation or the Book of Nature.

Neither is sufficient to render an adequate picture of reality because reality "is too complex to admit a single description" (Arbab, "An Inquiry" 136).

Instead, in order to come to increasingly comprehensive understandings of reality, two languages are needed.[13] These languages—or systems of investigation, understanding, communication, meaning, and practice—supplement—i.e., add to, compensate for, make up for the limitations of—each other in that together they provide a fuller picture of reality and its intricacies and possibilities in all their richness. Science focuses on natural, psychological, and social phenomena, and seeks to uncover the laws, patterns, principles, or conditions governing, underlying, or contributing to their behavior. Religion investigates spiritual verities; moral archetypes; the nature of the individual's relationship to his or her Creator, fellow human beings, and the rest of creation; and the evolving laws, ordinances, and ethical provisions required for humanity to advance towards realizing its inherent oneness. Both seek to translate, where possible, their respective findings into tangible, useful realities—to apply them for human betterment. Referring to them as two kinds of science, 'Abdu'l-Bahá offers the following description of their respective pursuits and the vital necessity of each:

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13   Sona Farid-Arbab's Chapter 6 ("Complementarity") provides a cogent analysis of this very theme.

Scientific knowledge is the highest attainment upon the human plane, for science is the discoverer of realities. It is of two kinds: material and spiritual. Material science is the investigation of natural phenomena; divine science is the discovery and realization of spiritual verities. The world of humanity must acquire both. A bird has two wings; it cannot fly with one. Material and spiritual science are the two wings of human uplift and attainment. Both are necessary—one the natural, the other supernatural; one material, the other divine. By the divine we mean the discovery of the mysteries of God, the comprehension of spiritual realities, the wisdom of God, inner significances of the heavenly religions and foundation of the law. (*Promulgation* 138)

Science and religion are also supplementary in that each sheds light on different aspects of certain phenomena, thus providing deeper insight into such phenomena and greater ability to penetrate their mysteries. An example of this is what it means to be human and to achieve human potential. Focusing on only one or another aspect of the human condition gives a reductionist—and, therefore, skewed—understanding of it. This, as Lample explains, is particularly clear in the case of consciousness and related human capacities. Correlating the work of Thomas Nagel and John Searle with the Writings and utterances of 'Abdu'l-Bahá,

Lample argues that "[s]cience, freed from a reductionistic lens, can go far in exploring the expression of such potentialities" (36). "Yet, for Bahá'ís," he continues, "science and reason alone cannot fully exhaust such possibilities; this is where religion is needed, to address and cultivate certain capacities with which the human being is endowed" (36). In this regard, Shoghi Effendi explains that without religion,

Human character is debased, confidence is shaken, the nerves of discipline are relaxed, the voice of human conscience is stilled, the sense of decency and shame is obscured, conceptions of duty, of solidarity, of reciprocity and loyalty are distorted, and the very feeling of peacefulness, of joy and of hope is gradually extinguished. (*World Order* 187)

The issue of reductionism is discussed in greater depth later, under Proposition 3.

It is tempting to additionally argue that science and religion supplement each other in the way that the left and right hemispheres of the brain supplement each other. This is the position that Rabbi Jonathan Sacks takes in his book *The Great Partnership*:

Science is about explanation. Religion is about meaning. Science analyses, religion integrates. Science breaks things down to their component parts. Religion binds people together in relationships

of trust. Science tells us what is. Religion tells us what ought to be. Science describes. Religion beckons, summons, calls. Science sees objects. Religion speaks to us as subjects. Science practises detachment. Religion is the art of attachment, self to self, soul to soul. Science sees the underlying order of the physical world. Religion hears the music beneath the noise. Science is the conquest of ignorance. Religion is the redemption of solitude. (Introduction)

While his book is very helpful in understanding the need for religion and science to work together in order for humanity to prosper, the partnership Rabbi Sacks rightly advocates is arguably more complex and interactive than he describes. Many of the distinctions he draws seem too sharp. This takes us to the next proposed way in which science and religion complement each other.

Proposition 2:
Science and Religion *Correspond to* Each Other

Religion is certainly concerned with meaning, human relationships, redemption, and what ought to be, while material science is arguably not concerned with such issues (although some may contend otherwise in the case of human relationships, as alluded to below). However, religion also explains reality, providing many insights into the nature of what is. *Some Answered Questions*

and the Tablet to Auguste Forel are full of such explanations, as are many of the other Writings of 'Abdu'l-Bahá and of Bahá'u'lláh Himself. Moreover, while science does indeed break things down and describe them, it also attempts to synthesize its findings into coherent understandings of reality. The perennial search for an equation in physics that explains everything—that, for instance, reconciles quantum physics and the theory of relativity in a manner so simple it can be explained on a t-shirt (Falk)—is just one example. Both science and religion, moreover, are about the conquest of ignorance. As quoted earlier, God sends His Messengers to "liberate the children of men from the darkness of ignorance" (Bahá'u'lláh, *Gleanings* 34:5). In these ways, science and religion go beyond supplementing one another. The proposition here is that they also correspond to—i.e., overlap or converge with—one another in a number of other ways, including "the questions they address and the methods they employ" (Arbab, "An Inquiry" 135).

Questions
In terms of the questions they address, they both shed light on some of the same features of reality. In other words, science and religion are concerned with realities that are ontologically the same or at least intimately connected. In *Some Answered Questions*, 'Abdu'l-Bahá states: "Religion, then, consists in the necessary relationships deriving from the reality of things" (41:9). In the Tablet to Auguste

Forel, He states: "By nature is meant those inherent properties and necessary relations derived from the realities of things. And these realities of things, though in the utmost diversity, are yet intimately connected one with the other" (para. 15).

To elaborate, science and religion, for the most part, now converge[14] in their recognition that, notwithstanding their diversity, human beings are, at their core, the same. As stated by the House of Justice: "World order can be founded only on an unshakable consciousness of the oneness of mankind, a spiritual truth which all the human sciences confirm. Anthropology, physiology, psychology, recognize only one human species, albeit infinitely varied in the secondary aspects of life" (October 1985). They similarly converge on the notion that the universe itself is interconnected, a central tenet of Buddhism, Hinduism, and the Bahá'í Faith, among other religions. According to 'Abdu'l-Bahá, "every part of the universe is connected with every other part by ties that are very powerful and admit of no imbalance, nor any slackening whatever" (*Selections* 137:2). Physics, as already mentioned, is on a quest to explain the interconnections of the universe as succinctly as possible. One prominent theory today holds that space itself is an interlinkage of individual quanta of gravity such that "the world seems to be less about objects

than about interactive relationships" (Rovelli 43), thus questioning the long-standing materialist notion that matter is the essential basis of reality. Environmental science likewise highlights the web of connections between nature and human beings and the deleterious consequences of our having ignored them. Arne Naess was an early proponent of this view. In addition, science and religion are both helping us to understand the characteristics of beneficial human relationships. Religion is obviously concerned with this. There is also a growing body of research highlighting the advantages of altruism, sharing, and cooperation. Relevant thinkers in this regard include Robert Axelrod, Natalie and Joseph Henrich, Thomas Nagel (*Possibility of Altruism*), and Martin Nowak.

Reason, Method, Imagination, and Models

Another way in which science and religion seem to correspond to each other is that they employ comparable criteria and methods when attempting to understand various features of reality and to advance their respective enterprises. Both resort to reason for justification. 'Abdu'l-Bahá explains: "If we say religion is opposed to science, we lack knowledge of either true science or true religion, for both are founded upon the premises and conclusions of reason, and both must bear its test" (*Promulgation* 107).

At the same time, both rely on intuition, creativity, and imagination to advance their respective projects. This

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14   The extent to which, and how, science and religion converged in the past is not addressed here but warrants attention in fleshing out this proposition.

may be obvious in the case of religion, but it is also true of science. The House of Justice states that when engaging in scholarship, we should "strive to develop . . . respect for a wide range of approaches and endeavours" (*Compilation* no. 380). Paul Feyerabend emphasizes the importance of such flexibility as it relates to the scientific method in particular. He says:

> Indeed . . . events and developments, such as the invention of atomism in antiquity, the Copernican Revolution, the rise of modern atomism . . . [and] the gradual emergence of the wave theory of light, occurred only because some thinkers either *decided* not to be bound by certain "obvious" methodological rules, or because they *unwittingly broke* them. (14)

In short, creative imagination is key. As Michael Karlberg puts it: "Many of the greatest advances in science required major leaps of imagination combined with an intuitive attraction to the beauty and elegance of compelling ideas" (*Constructing Social Reality*).

Religion and science also both use representational techniques, such as metaphors or models, to make sense of what they investigate. In science, models are often mathematical, but they also take different forms, a famous example being Niels Bohr's solar system model of the atom.[15] In religion,

we grapple with intelligible realities as well, such as love, happiness, and knowledge. In so doing, we are able to expound these realities only in sensible terms, employing metaphors as we do so. 'Abdu'l-Bahá explains that "when you undertake to express these intelligible realities, you have no recourse but to cast them in the mould of the sensible" (*Some Answered Questions* 16:4). For example, "knowledge is figuratively described as light, and ignorance as darkness" (16:5).

Faith

It can additionally be argued that both science and religion are ultimately grounded in faith. Some may take issue with this claim, arguing that science vindicates itself because it works. But there are a few points here.

In the first place, and returning once again to physics, it is certainly true that relativity theory and quantum mechanics are highly effective—they work well. Nevertheless, the quest to find a unifying theory continues, motivated by the underlying assumption that reality is ultimately amenable to being encapsulated by such a theory. The very notion that the universe is interconnected and has a nomological character to it that can be expressed in scientific terms is a matter of faith.[16]

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15   One debate is whether such models represent aspects of the world as they

are in themselves, or are just useful fictions for grappling with the phenomena perceived. See, for example, Smith and Karlberg's article as it relates the issue of truth and relativism.

16   Put otherwise, "there is no way to prove logically or show irrefutably through

No empirical test or observational vantage point could ever infallibly verify such an assumption. The same holds for the ontological claim that science typically rests on—namely, metaphysical naturalism. Although there is some variation in what this means, it is generally understood to be the conviction that nothing exists beyond the natural world and that it is this world, the elements that comprise it, and how these elements relate to each other, that science studies. Yet, ironically, naturalism cannot logically stand without invariably relying on that which is external to it, no matter how well it may seem to work for any given period. That is, on what grounds does it justify its own metaphysical stance without, in the last analysis, resorting either to circular reasoning (i.e., assuming that which it sets out to prove) or to faith?

In the second place, science has come up with a number of laws that appear to accurately explain various facets of reality. But faith remains a factor here as well. Perhaps the most vexing reason is David Hume's problem of induction, which has never been adequately solved. That is, just because some laws appear to work now, and also appear to have repeatedly worked in the past, does not guarantee that they will continue to work in the future. No number of past instances of a law having worked justifies the conclusion on either rational or empirical grounds that the same law will *always* work.

That we assume it will forever hold is again a matter of faith (or of custom or habit); things could always turn out to be otherwise. Referencing Hume once again: that the sun has always risen since the formation of the earth does nothing to guarantee that it will rise again tomorrow.

And in the third place, science is naturally disposed to outdoing itself, so seemingly inviolable scientific theories are always at risk of being superseded by new ones that are—at least potentially—more accurate and more comprehensive in scope. Newtonian physics, which dominated the intellectual landscape for well over two hundred years until Albert Einstein published his famous papers on special and general relativity, is a clear case in point.

That religion is also grounded in faith is comparatively uncontroversial. That, from a Bahá'í perspective, God is one, reality is one, and humanity is inherently one, are all matters of faith. What is important to consider, however, is what it means to have faith. Namely, matters of faith can be held dogmatically, leading, for example, to prejudice, superstition, or fanaticism—in which case they are not truly matters of faith, as discussed towards the end of this paper; or they can be held with reflective certitude such that as they are, to the extent possible, conscientiously put into practice and systematically tested in the phenomenal world, understanding of them evolves.[17] As

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observation and experimentation the truth of such a premise" (Arbab, "Inquiry" 148).

17   Further inquiry into this subject might suggest that there is actually a

William James observes in his essay "The Will to Believe," it is only by acting in accordance with a belief that we can comprehend its benefits and veracity. This point is addressed more fully later when we consider how science cultivates the development of religion. But first it is helpful to turn to some of the ways in which religion cultivates the development of science.

PROPOSITION 3:
RELIGION *CULTIVATES* THE
DEVELOPMENT OF SCIENCE

In a letter written on its behalf, the House of Justice states "that the task of humanity . . . is to create a global civilization which embodies both the spiritual and material dimensions of existence" and that "[t]he prosecution of this vast enterprise will depend on a progressive interaction between the truths and principles of religion and the discoveries and insights of scientific inquiry" (19 May 1995). This section considers a number of ways in which the truths and principles of religion can be understood to interact with the discoveries and insights of science. The main thesis is that religion as described above cultivates the scientific process, which also means that religion facilitates it, fortifies it, helps to guide it, and opens it up to new possibilities that may otherwise be concealed by materialist or naturalist assumptions. To make this case,

this section discusses *three subpropositions* and outlines some *proposed implications* that follow. The subpropositions are that religion cultivates science by A) furnishing science with enabling ontological assumptions, B) impelling the development of scientific consciousness, and C) fostering effective collaboration grounded in true friendship.

Subproposition A: Religion Furnishes Science with Enabling Ontological Assumptions

Gadamer made the seemingly disconcerting claim that we cannot read reality, understand a text, or interact with another person without prejudice. However, he does not use "prejudice" in the negative sense to which we have become accustomed. Basically, his position is that when we engage with a text, or with an aspect of reality, or in a conversation with someone, we should acknowledge that it is impossible for us to do so without our presuppositions exerting their influence over the way we perceive. We never approach or interact with anything or anyone as blank slates. Rather, preconceptions both enable and constrain our understandings of what we encounter. They can certainly be detrimental: history is fraught with horrific examples of prejudice in action, as is the present. Alternatively, they can be beneficial, attuning us to certain aspects of reality. The point, in any case, is to continually challenge our preconceptions during our encounters, and to adopt and refine assumptions that enable us to achieve

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continuum between dogmatism and true faith.

more accurate and fruitful readings of reality.

It is proposed that this is one of the ways in which religion, as described above, can cultivate the process of scientific discovery. Specifically, it can furnish science with certain vital ontological assumptions without which science can go awry and arrive at conclusions that are not only untethered to reality but are actually harmful. One could reasonably ask, for example, whether or not the so-called "disease" known as hysteria, historically associated with women's wombs and their sexuality, and later with their psychology, would have ever been "discovered" had women been understood to be equal with men at the time. Instead, this seems like a clear case in which science has distorted reality, having socially constructed a disease out of a cluster of symptoms women manifested as a way to cope with their oppressive social circumstances. Remove the patriarchy, and the cluster of symptoms evaporates. In any event, there is no such disease actually "out there" to be discovered (Smith 221–36). Another case is drapetomania, a "disease" identified in the 1850s to explain the phenomenon of slaves running away from their masters—as if it were natural for them to want to be slaves (289). Obviously, this "disease" does not exist in reality; it is instead nothing more than a social construct divorced from the recognition that ontologically humanity is one.

Subproposition B: Religion Impels the Development of Scientific Consciousness[18]

There are several ways in which it can be proposed to do so, among which are the following.

Revelation, the essence of religion, releases the power of scientific investigation. As we have seen, Revelation expands consciousness by endowing the sincere with a "new eye, a new ear, a new heart and a new mind." It also serves, in Bahá'u'lláh's words, "as the key for unlocking the doors of sciences, of arts, of knowledge, of well-being, of prosperity and wealth" (*Tablets* 96), illuminating, according to the House of Justice, "all areas of human endeavour and all academic disciplines" (*Compilation* no. 416). Indeed, Bahá'u'lláh affirms that "[a]ll the wondrous achievements ye now witness are the direct consequences of the Revelation of this Name" (*Gleanings* 74:1). The suggestion, therefore, is that science is able to flourish because the world is infused with the Revelation of God. It also flourishes on condition that "man's river flow into the mighty sea, and draw from God's ancient source His inspiration" ('Abdu'l-Bahá, *Selections* 73:2). When we are thus inspired, we find that "nothing whatsoever in the whole universe can be discovered that doth not reflect His splendor" (Bahá'u'lláh, *Gleanings* 93:1).

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18   In *One Common Faith*, it is stated that Bahá'u'lláh "recast the whole conception of religion as the principal force impelling the development of consciousness" (23).

There are many examples of scientists who, motivated by the religious impulse, made tremendous advances. Johannes Kepler is one. Convinced that the Copernican system had geometrical rationality, that God wanted to be recognized through the Book of Nature, and that the world manifested Divine purpose, Kepler developed his three laws of planetary motion, one of which was the groundbreaking idea that the planets orbited the sun in ellipses instead of circles (Campbell and Looy, Section 2: Entries). Isaac Newton, whose work is considered by many to be the greatest achievement of any scientific mind, was similarly inspired, claiming the following in his *Principia*: "This most beautiful system of the sun, planets, and comets could only proceed from the counsel and dominion of an intelligent and powerful Being" (Campbell and Looy). For him, purity of religion and purity of natural philosophy (science) went hand in hand. A case could be made that both Kepler and Newton were galvanized by the notion that "the highest and last end of all learning [is] the recognition of Him Who is the Object of all knowledge" (Bahá'u'lláh, *Gleanings* 98:4).[19]

Religion expands consciousness beyond instrumental rationality. Positive science, with its emphasis on cause-effect explanations, is often criticized for advancing a one-sided—some would say, distorted—view of nature. Its emphasis is not so much on the "harmony between society and the natural world" (Universal House of Justice, 29 November 2017) as on how the natural world can be understood in quantitative terms and be subjected to manipulation and exploitation. Moreover, when instrumental thinking is extended to human beings, it reduces them to objects to be studied and disciplined, thus alienating them, robbing them of an aspirational and transcendent understanding of life, and sapping human relations of their potential to be sources of mutual uplift. According to Max Weber, this form of rationalization has come to permeate and regulate our lives (Kalberg). It has subordinated basic questions of value to means-ends logic and has consequently produced a world devoid of moral direction, purpose, and mystery. Michel Foucault has similar concerns. He pays particular attention to the human sciences, which, he says, have their origins in the Enlightenment drive to find more rational ways to govern. The primary concern of these sciences is twofold: to survey and manage populations, and to produce efficient, disciplined, normalized individuals.

With such analyses in mind, it might be suggested that what is critical is the irreducibly situated relationship humans have with the world and each

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19   There are in fact a myriad other examples which deserve attention, including the many scientific advances made under Islam. 'Abdu'l-Bahá states: "How much Islám served and furthered the cause of science!" (*Promulgation* 347). Even so, this proposition also needs to take into account the legitimate argument that science was only able to advance when freed from the constraints of religious orthodoxy.

other, which ideally entails normative, practical, and discursive engagement. Humans are inherently involved participants and relational beings, and religion, the proposition goes, is essential to nourishing these fundamental aspects of our reality. Thus, when religion informs science, reason expands to take account of these aspects. Put another way, with the influence of religion, instrumental, normative, practical, and communicative reason build on and reinforce one another; the concern with quantity is wedded to a concern with quality; and "is the case" and "ought to be the case" become coherently related.

Religion expands consciousness by encouraging teleological and historical thought. As discussed above, science typically focuses on the efficient causes of things (i.e., relations of cause and effect). It thus generally downplays or ignores three of the four causes identified by Aristotle, namely the material cause (what something is made of), the formal cause (what form it takes or is intended to take), and the final cause (what purpose it serves). Of particular note is the final cause, which was basically dismissed as illegitimate with the rise of science and evolutionary theory, and essentially disappeared with the recent collapse of metanarratives. According to Jean-François Lyotard, we have become incredulous towards metanarratives such as the Enlightenment story, which says that humanity progresses towards greater and greater liberty through the use of reason, and G.W.F. Hegel's story of the

progressive unfoldment of knowledge and its invariable unification. These, to elaborate on Lyotard's thesis, have ultimately proven deficient at consolidating thinking, framing our approach to reality, and equipping us with a viable sense of direction or purpose. In their stead, "indifferent, disparate, linguistic practices" have proliferated (Schroeder 329). Lyotard thinks this is a positive development, and from the perspective of allowing for diversity of expression, there is definitely some merit to it. But from a Bahá'í perspective, an overarching, unifying narrative—one that also accommodates a diversity of micro-narratives or practices—is essential to human progress. Without it, fragmentation, needless conflict, and suffering will continue to plague humanity.

As the House of Justice affirms in its 2 March 2013 message, Bahá'ís believe in such a narrative: namely, that humanity has purpose; that it is inexorably moving towards the oneness of humankind, the acme of its evolutionary process; that two interactive processes are propelling humanity in this direction—one disintegrative and the other integrative[20]; and that we

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20   The process of integration includes developments such as enhanced worldwide communication through the Internet and other technological means, overall increased concern with the application of human rights, and growing global consciousness of the deleterious effects we are having on the environment. The process of disintegration includes misuses of communications technology (such as for

have a vital role to play in contributing to the forces of integration. In fact, as the House of Justice avers, "Such is the view of history that underlies every endeavour pursued by the Bahá'í community." This view, which also creates space for micro-stories (allowing for a unity in diversity of stories—a substantial topic in its own right), provides the essential historical and ethical context required for justifying the generation of knowledge, for giving direction to the scientific endeavor more specifically, for establishing meaningful goals to be achieved along the continuum of development, and for determining what knowledge is helpful and what is fallacious and/or deleterious. Would, for instance, such a narrative ever countenance the pursuit of eugenics as a legitimate scientific program, or condone the effort to scientifically categorize races according to intelligence? Similar questions can also be asked regarding technological innovation.[21]

Also deserving attention is the idea that various scientific theories would be enriched by considering the role of final causes. There is, for instance, much to be said on this topic as it pertains to the theory of evolution or to cosmology.[22]

Religion expands consciousness by helping science to avoid engaging in unnecessary forms of reductionism. Science can be reductionist in different ways. One way is by embracing the principle of parsimony, associated with Ockham's Razor, which maintains that the simplest of competing theories or explanations (those involving the least number of assumptions or explanatory entities) is usually the correct, or most acceptable, one. Another way, more typically associated with reductionism, is that science explains complex phenomena by breaking them down into their component parts and articulating the interactions between those parts. Yet another way is that science has a tendency to gravitate towards formulas, as is clearly the case in physics.

There is nothing wrong with being reductive under certain circumstances. It is just that, inappropriately applied, the reductionist mindset can blind scientists to phenomena that exist at higher levels of being or functioning. This is Nagel's insight regarding physicalism: "The physical has been so irresistibly attractive, and has so dominated ideas of what there is, that attempts have been made to beat everything into its shape and deny the reality of anything that cannot be so reduced" (*View from Nowhere* 15). He thus rejects psychophysical reductionism, since mental

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spreading harmful propaganda), growing factionalism and tribalism, the decline of institutional norms and values, and the willful distortion of truth for personal and partisan gain.

21   Weinberg ("Technology") provides an insightful discussion in this regard.

22   See, for instance, Mehanian and

Friberg as well as Phelps. It would additionally be fruitful to compare the teachings of the Bahá'í Faith on this matter with the work of thinkers such as Ian G. Barbour, Paul W. Davies, and Michael Denton. See also blog.loomofreality.org

capacities cannot be "accommodated by the physical conception of objectivity" (15). The reductionist mindset also disregards certain variables that may be pivotal to explaining a given phenomenon in all its complexity, encourages dichotomous thinking in cases where there are in fact no dichotomies, and is unable to grapple with emergent phenomena (which manifest characteristics qualitatively different than their component parts) as well as with what Arbab, referencing Nagel, calls "extended reality" ("Inquiry" 152).

To be sure, not all scientific approaches are equally reductionist. Some, for example, are more concerned with complexity than others—systems theory, chaos theory, and complexity theory among them. The main point is simply that religion helps to attune science to realities it might otherwise miss or even dismiss, and which, in some cases, they could explore together.[23] For example, the potential implications for addressing the mind-body interaction problem, and for reconceptualizing the relationship between matter and spirit more generally, are significant.

Religion expands consciousness by awakening within us requisite spiritual susceptibilities. One of Martin Heidegger's insights is that our moods disclose the world to us in certain ways, conditioning what we perceive, how we interpret it, what meanings we assign to it, and what seems possible, with anxiety being the preeminent mood for understanding our existential situation (Wrathall 30–37). Our dispositions, more generally, affect what can be revealed about reality. It can be posited that, from a Bahá'í perspective, an essential disposition for perceiving reality and generating knowledge is a humble posture of learning in which fellow investigators find joy in each other's accomplishments, seek ways to build on each other's insights, consolidate the resulting knowledge into fuller, more attuned, understandings of reality, and thereby articulate ever-evolving, unified visions of what has been learned, what avenues of enquiry have demonstrable promise, and how these avenues can best be pursued. Such a posture is especially effective when combined with the motivating impulse that religion inculcates along with, as quoted above, the "capacities to love, to forgive, to create, to dare greatly, to overcome prejudice, to sacrifice for the common good and to discipline the impulses of animal instinct," all of which are essential for generating knowledge and human flourishing, as are the qualities of courage and self-sacrifice. This ties in to a third way in which religion cultivates science.

Subproposition C: Religion Fosters Effective Collaboration Grounded in True Friendship

It is proposed that religion, drawing specifically on the Bahá'í writings, does this by prescribing the process by which effective collaboration can proceed, namely, "a consultative process which, understood as the collective

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23   Arbab ("Inquiry") and Lample both address this very topic.

investigation of reality, promotes detachment from personal views, gives due importance to valid empirical information, does not raise mere opinion to the status of fact or define truth as the compromise between opposing interest groups" (Universal House of Justice, 2 March 2013). Gadamer, as we have seen, says that while we can only understand by virtue of our preconceptions, they need not determine the *outcome* of our understanding. Understanding, in fact, requires work. It necessitates care, perceptiveness, imagination, and, above all, a willingness to put our own preconceptions on trial. This is facilitated by consultation, which presumes that the generation of knowledge is something everyone can and should be empowered to participate in (which, in turn, is in line with the principle of the independent investigation of truth); that insights are provisional and fallible no matter what their human source, but that they are also potentially viable and worthy of consideration; that different viewpoints offer different takes on reality, some of which overlap and reinforce one another; and that a major objective is to collectively scrutinize the value of these perspectives, to weed out the ones that are flawed, and to, where possible, correlate the ones that are beneficial. The overriding concern involves achieving unity of understanding about the truth and strengthening collective purpose rather than having certain opinions win the day.[24]

Furthermore, to facilitate such an exchange of insights, participants endeavor to share their ideas freely but with care, courtesy, devotion, moderation, and humility, and to be detached from their personal views when considering the opinions of others. This approach mirrors one of Michelle Le Doeuff's concerns. For her, as explained by William R. Schroeder, "philosophers must present their ideas with greater humility, as suggestions to be developed rather than closed systems that must either be accepted or rejected in their entirety" (319). Bahá'u'lláh, moreover, links such humility with power:

> They who are the beloved of God, in whatever place they gather and whomsoever they may meet, must evince, in their attitude towards God, and in the manner of their celebration of His praise and glory, such humility and submissiveness that every atom of the dust beneath their feet may attest the depth of their devotion. The conversation carried by these holy souls should be informed with such power that these same atoms of dust will be thrilled by its influence. (*Gleanings* 5:2)

Through such communication, the

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24   There is much that can be said about how this approach correlates with, and differs from, other approaches to fostering meaningful dialogue. Key thinkers in this regard include Hannah Arendt, David Bohm, Jurgen Habermas, and Jonathan Haidt.

walls of misunderstanding dissolve, and agreement about what *is* the case, what *should* be the case, and *how* to work towards the latter in a mutually beneficial manner is facilitated.

Proposed Implications

There are a number of potentially advantageous implications that stem from the notion that religion cultivates science in the ways discussed above. Specifically, it is suggested that the influence of religion on science helps resolve various issues that have been identified regarding how science actually works and which have not been adequately addressed from a materialist perspective—or, for that matter, from any other philosophical perspective. Briefly, these include the following problems.

The problem of the theory-ladenness of observation. This is the notion that what we perceive of reality is affected by our theories of it. That is, we cannot help but approach reality through our theoretical lenses, which influence what facts we see (and/or construct), how we organize or categorize these facts, what generalizations we infer from them, and what meanings we assign to them. This situation is related to the idea, as Helen Longino puts it, that background assumptions "can . . . lead us to highlight certain aspects of a phenomenon over others, thus determining the way it is described and the kind of data it provides" (216). It is debatable how theory-laden observation

actually is,[25] but to whatever extent it is, it would seem judicious, where possible, to have it laden with the right set of assumptions. As suggested above, religion plays a key role in this regard.

The problem of the underdetermination of theories. This problem is directly tied to the problem of theory-ladenness. It is that 1) competing theories can often explain the same set of data, and 2) there is no way, appealing to the data alone, of determining which theory is the correct one. Theory choice is underdetermined by the available evidence. But again, religion, with the assumptions it brings and its ability to expand consciousness, can help. For example, one could theorize that the poor are poor because they are lazy, which many have.[26] Or one could theorize, based on exactly the same data, that they are poor owing to structural conditions and because they have not been sufficiently accompanied and given the opportunity to build requisite capacities to help surmount their deleterious situation. Religion would suggest that the latter theory is more accurate and should be chosen over the former. It thus helps to serve as an algorithm for theory choice. It bears mentioning, moreover, that the latter theory is also

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25   The degree to which our lenses or paradigms affect the way in which reality is perceived and socially constructed is an involved subject. See Smith and Karlberg for a discussion.

26   This example is similar to one found in FUNDAEC's discussion on objectivity in Chapter 3 of its unit on *Science, Religion, and Development*.

the more complex of the two, once again calling into question the merits of reductionism in certain cases.

The problem of normal science. Thomas Kuhn explains that scientists are habitually involved in what he calls "normal science," which amounts to puzzle solving. By this he means that the paradigms they operate within set out the rules, standards, and problems to be addressed and that scientists endeavor to solve these problems in accordance with those rules and standards. Normal science is about fitting phenomena into the paradigmatic construct. In the process of so doing, the scientist runs into anomalies, which at first are also viewed as puzzles to be solved. However, over time, some of these anomalies can become irritants, at which point the scientist, faithful to his or her paradigm, will often, as Feyerabend depicts it, "interpret . . . evidence so that it fits [his or her] fanciful ideas, eliminate difficulties by *ad hoc* procedures, push them aside, or simply refuse to take them seriously" (148). Yet, not all anomalies are successfully assimilated, and, as they accrue, they can lead to crisis and subsequently to a paradigm shift or revolution. There is much debate over the accuracy of Kuhn's characterization of normal and revolutionary science, but it is nonetheless a useful account for appreciating once again the power of religion to cultivate the development of science. Specifically, because of its capacity to expand consciousness and foster effective communication—thereby enabling scientists to investigate truth

without being unduly influenced by their preconceptions—the hypothesis is that religion can help with identifying anomalies for what they are, and thus with evaluating the adequacy of any given paradigm for guiding scientific work.

The problem of how long to hold on to a theory. This issue is related to the previous problem. The key question is how long to hold on to a theory in light of countervailing evidence. In other words, since a theory is often inundated by anomalies from the outset, what is a reasonable timeframe for giving it a chance, and when does it become fanatical not to let it go? (For example, after Copernicus laid it out, the heliocentric perspective weathered lots of falsifying evidence for over a hundred years until it was finally vindicated by the work of Galileo, Kepler, and Newton.) A theory can often withstand a lot of anomalies because it is made up of a network of core assumptions, concepts, and hypotheses along with auxiliary assumptions, concepts, and hypotheses, and any seemingly falsifying evidence can be readily attributed to its auxiliary features, which can be sacrificed without compromising its core features.[27] In some cases, this is advantageous for the generation of knowledge. Often, beneficial theories need time and patience on our part to prove themselves, such as the theory, maintained by Bahá'ís, that capacity building for

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27   See Godfrey-Smith's discussions of Quine's holistic theory of testing (30–33) and Lakatos's research programs (103–107).

service is essential for achieving the transformation of society. In other cases, such as social Darwinism, it would seem counterproductive to hold on to a theory notwithstanding its apparent fertility in its heyday. Again, religion helps to identify theories that are constructive and advisable to pursue regardless of the anomalies that would initially suggest otherwise. Operating in a learning mode in light of religious convictions about, say, the oneness and nobility of humankind, helps with distinguishing between which theories should be jettisoned versus which should be given a chance to (potentially) bear fruit. In the absence of such a mode, theories may either be rejected too quickly or maintained irrationally to suit prejudicial interests, neither of which outcome is favorable to progress. In terms of the latter outcome, the House of Justice states that "bigotry is retrograde and unacceptable in whatever form it chooses to present itself" (20 July 1977).

The problem of incommensurability. This is the idea, stemming from both Kuhn's and Feyerabend's work, that there is no common measure for comparing theories and that their proponents actually talk past each other because they see different realities, employ different methods, recognize different standards, and in fact live in different worlds. Again, there is controversy over whether or not different paradigms truly are incommensurable. In any event, religion can assist here as well. Although not prescriptive of the methods that should be employed

across various academic endeavors, it once again provides assumptions and standards that can serve as a basis for intelligible communication between theoretical frameworks. In addition, it establishes consultation as the method for the collective search for truth, instills in the individual requisite spiritual susceptibilities that expand consciousness, and contextualizes all scientific endeavors within a common historical narrative. In these ways and others, religion can help to dissolve paradigmatic walls that may otherwise remain unyielding by facilitating meaningful communication that can in fact lead to the correlation, even synthesis, of initially disparate paradigmatic insights. In so doing, it can help to address a current dilemma identified in a letter written on behalf of the House of Justice:

> One of the problems of modern times is the degree to which the different disciplines have become specialized and isolated from one another. Thinkers are now faced with a challenge to achieve a synthesis, or at least a coherent correlation, of the vast amount of knowledge that has been acquired during the past century. (*Compilation* no. 430)

PROPOSITION 4: SCIENCE *CULTIVATES* THE DEVELOPMENT OF RELIGION

According to 'Abdu'l-Bahá:

> Bahá'u'lláh declared that religion is in complete harmony with science

and reason. If religious belief and doctrine is at variance with reason, it proceeds from the limited mind of man and not from God; therefore, it is unworthy of belief and not deserving of attention; the heart finds no rest in it, and real faith is impossible. (*Promulgation* 231)

Having outlined in the three previous sections some of the proposed ways in which science and religion supplement and correspond to each other, and in which religion cultivates the development of science—keeping in mind the reciprocity between the two systems of knowledge—this final section turns to some of the proposed ways in which science cultivates the development of religion. This section is vital in addressing the concerns raised by critics of religion, because it recognizes that when unnourished by science, religion does indeed become problematic. Four subpropositions are briefly considered, namely, that science cultivates religion by helping to A) refine understanding of its core assumptions, B) identify what is possible for it to achieve, C) ensure that faith does not degenerate into superstition, and D) ensure that religious practice does not become ritualized.

Subproposition A: Science Helps to Refine Our Understanding of the Core Assumptions of Religion

Shoghi Effendi states that the Bahá'í Faith is "scientific in its method" (Letter). The scientific approach the Bahá'í community is learning about involves a process of action,

reflection on action, consultation, and study in which all are invited to participate. As Bahá'ís and their collaborators engage in community-building activities devoted to the spiritual and moral empowerment of children and junior youth, enhancing the devotional life of the community, raising capacity for service, and participating in social and economic development projects as well as in discourses relevant to the advancement of society, they turn to the teachings of the Bahá'í Faith and the guidance of the Universal House of Justice and strive to put these precepts into practice through consistent, systematic action. In so doing, their knowledge is tested, giving rise to insights and questions about which approaches work and what adjustments need to be made to more fruitfully advance their various endeavors. Through reflection and consultation on such experience in light of further study of the teachings and the continuous flow of guidance from the House of Justice, new levels of understanding are achieved on how best to proceed, which are again tested in action.

This reciprocal, organic process gives rise to ever-advancing emergent conditions, which enables both the community and the individuals that compose it to progressively flourish as generators of knowledge and servants of humanity. At the same time, the proposition is that this learning mode inspires further insights into the nature of the core tenets of the Bahá'í Faith—into, for

example, what is meant by the one-ness of humanity, the inherent no-bility of every human being, the ca-pacity of people to contribute to the accumulation of knowledge, and the equality of women and men. While, on the one hand, such assumptions will never be abandoned, our un-derstanding of them is subject to change as we put them into practice and then reflect on the experience gained. This, it is further proposed, is part of what it means to combine an unshakable confidence in the core principles of religion with a posture of humility. While, again, our belief in the equality of women and men will always remain core, we cannot be dogmatic about our understanding of this fundamental tenet because our understanding is always subject to refinement through the scientific approach we have adopted.

Subproposition B: Science Helps to Identify What Is Possible for Religion to Achieve in Any Given Setting

Science helps to determine what the situation is, what works and does not work, and what is possible. As religion cultivates science by furnishing it with enabling ontological assumptions, ex-panding consciousness, and channeling the power of Divine assistance, science in turn helps religion to avoid unwar-ranted idealism by providing tools with which to read reality, to assess capac-ity, and to either corroborate or falsify certain hypotheses about what can be achieved under particular circumstances. Reality both enables and constrains what

is possible in any given setting, and sci-ence helps religion to be attuned to this.

The scientific approach to achiev-ing such attunement involves various elements of systematization at the community level, such as developing unity of understanding about current conditions as well as unity of vision about viable possibilities for growth; devising, in accordance with such vi-sion, concrete goals and plans of action to meet those goals based on what has been accomplished to date as well as on realistic assessments of capacity, re-sources available, and the coherence of different endeavors; faithfully imple-menting those plans in a spirit of har-mony; making necessary adjustments to plans as experience is gained, albeit in a manner that does not compromise continuity of action; analyzing the knowledge that has thus accrued; and revising visions of growth in view of this knowledge, the increased capacity developed, the greater level of coher-ence between the different endeavors being pursued, and the new opportu-nities created as a result of this pro-cess. Overall, this scientific approach is concerned with "how the capacities and powers of the human spirit can be tangibly channeled to effect beneficial social change" (Weinberg, "Contribu-tions" 209). It is, moreover, an organic process that encourages the commu-nity to be neither haphazard nor rigid, neither frenetic nor formulaic, in its ap-proach to applying religious teachings and generating beneficial knowledge.[28]

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28   This summary of systematization

Subproposition C: Science Helps to Ensure that Faith Does Not Degenerate into Superstition

This is a core claim of the Bahá'í Faith. 'Abdu'l-Bahá states: "If religion does not agree with science, it is superstition and ignorance" (*Promulgation* 128). On this point, it is helpful to distinguish between superstition and faith. It is proposed that superstitions are beliefs or practices, typically about the perceived supernatural, that are uninformed by reason or systematic investigation. They are fictitious reifications socially constructed as means for dealing with ambiguity or fear of the unknown. Because they are practiced unreflectively, they are essentially mechanical and dogmatic. Faith, on the other hand, is equivalent to "conscious knowledge expressed in action" (Universal House of Justice, *Turning Point* 294). It is anything but blind acceptance.

As we have seen, every theory or assumption, whether scientific or religious, is in the last analysis based on some element of faith. However, as we have also seen, faith evolves through the scientific process of action, reflection on action, and consultation, conducted with systematic reference to authoritative guidance. It is tested through observation, experimentation, and reason. This seems to be the crux of the matter. Without such a learning process in place, statements of faith can easily become ossified, and it is only a short step from ossification to superstition. It is also only a short step from ossification to the imposition of ideas by those with more sway, thus compromising the essential principle of the independent investigation of truth.

In short, faith as opposed to superstition is characterized by a mode of learning which entails comfort with ambiguity, willingness to modify understanding in view of experience, reflective certitude versus unreflective certainty, and processual versus formulaic thinking. Informed as it is by scientific methods, faith expands consciousness, whereas superstition stifles it, blinding it to certain realities and possibilities for growth.[29]

Subproposition D: Science Helps to Ensure that Religious Practice Does Not Degenerate into Ritual

Similarly, this scientific mode of learning helps to guard against ritual and rigidity in the application of religious teachings. Avoiding ritual is essential for promoting an animated unity as opposed to discord and superficiality. On this point, 'Abdu'l-Bahá states: "All these divisions we see on all sides, all these disputes and opposition, are caused because men cling to *ritual* and outward observances, and forget the simple, underlying truth" (*Paris Talks*

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draws on the 27 December 2005 and 28 December 2010 messages of the Universal House of Justice, as well as on its statement *The Institution of the Counsellors*.

29   Comparisons could be also made with ideology, whether religious or secular, although the discussion would be more involved as ideology is typically more comprehensive and systematic than superstition.

39:12). Operating in a mode of action, reflection on action, consultation, and study assists with determining what a given religious activity or practice is for, how effective it is at meeting its stated objective(s), and how, where appropriate, it can be continually improved upon so that it does not become divisive, formulaic, hollow, or stale.

Conclusion

The House of Justice affirms that "religion without science soon degenerates into superstition and fanaticism, while science without religion becomes the tool of crude materialism" (2 March 2013). Neither religion nor science can realize its true potential when there is no reciprocity between them. Each on its own invariably lapses into dogmatism and sterility, or becomes far less than it can be, which in turn leads to fragmentation, disenchantment, mediocrity, alienation, anomie, and the hampering of humanity's progress towards oneness. When, on the other hand, they are in dynamic interplay, they both evolve into what they can truly be, thereby achieving that which is far greater than the sum of what each can bring about on its own.

This paper has proposed one approach to articulating the complementarity between science and religion—in view of the legitimate concerns that many proponents of materialism and other thinkers have about religion and the ills of society—which is to consider how these two systems of knowledge and practice supplement, correspond to, and cultivate each other. It is suggested that by adopting such an approach, and by subjecting the various propositions and subpropositions advanced in this paper to further scrutiny, we can more adequately understand how science and religion, in their true forms, engage in a unity in diversity of knowledge generation that is essential for the progress of humanity.

In making this case, the paper has introduced a number of concepts and ideas, all of which deserve much greater attention than has been possible here. Future areas of exploration could also include how the dynamic relationship between science and religion helps to resolve additional issues of perennial concern such as the perceived tensions between objectivity and subjectivity, foundationalism and anti-foundationalism, and truth and relativity. Finally, the Báb admonishes us to "observe all the things which God hath created at His behest with the eye of the spirit, even as ye see things with the eyes of your bodies" (*Selections* 17:15), enabling us to, as Bahá'u'lláh states, "discriminate between truth and falsehood, even as [we] distinguish the sun from shadow" (*Gleanings* 125:7). It would seem propitious, therefore, to place greater emphasis on exploring the power of spiritual discernment to advance both systems of knowledge and practice.

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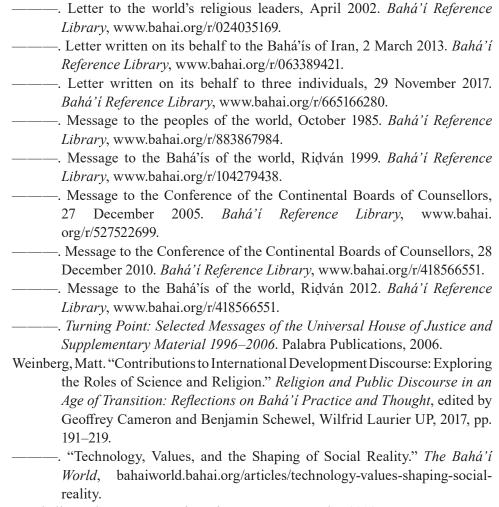
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The World Grows Blackthorn Walls

SHOLEH WOLPÉ

Tall, stiff and spiny.
Try to make it to the other side
and risk savage thorns.

We who left home in our teens,
children who crossed boundaries and were torn
by its thousand serrated tongues,
we who bear scars that bloom and bloom
beneath healed skins,
     who have we become?

Why do they call us aliens,
as if we come from other planets?

I ask myself:
     is home my ghost?
Does it wear my underwear
folded neatly in the antique chest
of drawers I bought twenty years ago,
nest inside my blouse that hangs
from one metal hanger I've been meaning to discard?
Is it lost between these lines of books
shelved alphabetical in a language
I was not born to, or here on the lip
of this chipped cup left behind
by my lover long gone?

I carry seeds in my mouth, plant
turmeric, cardamom, and tiny
aromatic cucumbers in this garden,
water them with rain I wring
from my grandmother's songs.
They will grow, I know, against
these blackthorn walls.
They can push through anything, uncut.

I left home at thirteen.
I hadn't lived enough to know how
not to love.
Home was the Caspian Sea, the busy bazaars,
the aroma of kebab and rice, Friday
lunches, picnics by mountain streams.
        I never meant to stay away.
They said come back
and you will die.

Exile is a full suitcase with a broken strap,
it's a hundred notebooks with scribbles.
I throw them into fire and begin to write again,
this time tattooing the words on my forehead,
this time, writing, not to forget.

Complacency is communicable like the common cold.
I swim upstream to lay my purple eggs.

They say draw sustenance from this land,
but look how my fruits hang in spirals
and smell of old notebooks and lace.

What is a transplanted tree
but a time being
who has adapted to adoption?

Spirits urge and spirits go,
but I speak only to the future.
Perhaps it's only in exile that they arrive.
They weep and wail at the door of the temple
where I sit at the edge of an abyss.
But even this is an illusion.

Social Affinity Flow Theory: A New Understanding of Both Human Interaction and the Power of the Bahá'í Training Institute Process

CHRISTOPHER G. GOURDINE
JUSTIN R. EDGREN
THOMAS L. TRICE
JOSEPH M. ZLATIC

Abstract

This article presents a new theoretical construct, Social Affinity Flow Theory (SAFT), which both describes and predicts flow phenomena across a diversity of human social systems and is founded upon constructal law. Constructal law and its associated s-curves describe many phenomena, both in nature and in human societies. Extrapolated from the work of Bejan and Zane and integrating social science research, it provides a foundational explanation of social rifts prevalent in many societies today as well as constructive efforts of social change, whether secular or religiously based. A primary example of constructive change explained by SAFT is the community-building work of the Bahá'í Faith, as reflected in both its teachings and its training institute process.

Résumé

Cet article présente une nouvelle construction théorique, la théorie des flux d'affinité sociale (Social Affinity Flow Theory, ou SAFT), qui décrit et prédit les phénomènes de flux dans une diversité de systèmes sociaux humains et qui est fondée sur la loi constructale. La loi constructale et les courbes en S qui y sont associées décrivent de nombreux phénomènes, tant dans la nature que dans les sociétés humaines. Extrapolé des travaux de Bejan et Zane et intégrant la recherche en sciences sociales, l'article fournit une explication fondamentale des fractures sociales qui prévalent aujourd'hui dans de nombreuses sociétés ainsi que des efforts constructifs de changement social, qu'ils soient fondés sur la laïcité ou la religion. Le travail de construction communautaire de la foi bahá'íe, tel qu'il se reflète dans ses enseignements et dans son processus d'institut de formation, est un bon exemple de changement constructif expliqué par la théorie des flux d'affinité sociale.

Resumen

Este artículo presenta una nueva construcción teórica, Social Affinity Flow Theory (SAFT), que describe y predice los fenómenos de flujo a través de una diversidad de sistemas sociales humanos y se basa en la ley de "constructal." La ley constructal y sus "s-curvas" asociadas describen muchos fenómenos, tanto en la naturaleza como en las sociedades humanas. Extrapolado del trabajo de Bejan y Zane e integrando la investigación en ciencias sociales, proporciona una explicación fundamental de las grietas sociales que prevalecen en muchas sociedades hoy en día, así como los esfuerzos constructivos de cambio social, ya sean laicos o religiosos. Un ejemplo principal de cambio construc-

tivo explicado por SAFT es el trabajo de construcción comunitaria de la Fe Bahá'í, como se refleja tanto en sus enseñanzas como en su proceso del programa del Instituto.

In January 2016, members of the Bahá'í Faith around the world were addressed by the international head of their religion with the words, "There is a growing appreciation among people in all parts of the world of the efficacy of Bahá'u'lláh's remedy for healing the maladies of society" (Universal House of Justice, 20 January 2016). Among the "maladies of society" is a fundamental disunity between peoples of various ethnicities, cultures, religions, political affiliations, genders, generations, and other identities. It is in this often contentious space that members of the Bahá'í Faith, a world-embracing religion founded on the concept of human unity, strive to bring about a more just and peaceful society for all humankind. Clearly, there is a stark contrast between the aims of this religious community and aspects of the world in which its members live and operate.

But its aims are even higher still. Not merely advocating the cause of peace, its members are in the midst of a grassroots reshaping, according to the principles of their Faith, of the societies in which they live. Chief among Bahá'í beliefs is the essential unity of humankind, and principal among the objectives of this religious community is to manifest this spiritual reality in social models that demonstrate an ever-widening circle of inclusion and influence. During that same year,

the Universal House of Justice stated, "The Divine Plan continues at the present time with the intensive effort to establish a pattern of community life that can embrace thousands upon thousands in clusters that cover the face of the planet" (26 March 2016). The current global plans of the Bahá'í Faith, meant to address the ills of human civilization, stem from the injunctions of its Prophet-Founder, Bahá'u'lláh, who stated in the late nineteenth century, "The All-Knowing Physician hath His finger on the pulse of mankind. He perceiveth the disease, and prescribeth, in His unerring wisdom, the remedy" (*Gleanings* 106:1).

One of the key teachings of the Bahá'í Faith is the essential harmony between science and religion. Though there are many ways of describing this harmony and its implications, the one embraced for this paper is each being a source of truth and understanding. In other words, the methods of science and the intellectual clarity it can provide can reinforce religious understanding and, in some cases, even deepen appreciation for the tenets of one's religion. It is hoped that the reader, likely familiar with at least the fundamentals of the Bahá'í Faith, when introduced to a new scientific construct called Social Affinity Flow Theory (SAFT), will afterwards gain a deeper appreciation for the Faith's teachings and its Founder's claim of "prescribing the remedy" for an ailing humanity. Accordingly, we will explain SAFT's foundation in the physical sciences (specifically, in constructal law), its application in

explaining social phenomena, and its relevance to understanding the scientific basis of actions prescribed within the global plans now underway within the Bahá'í community.

Understanding Constructal Law from Physics

Bejan and Zane assert that the constructal law (CL) applies to the development of organisms, "inanimate nature and engineered systems." Their thought-provoking work defines constructal law thus: "flow systems should evolve over time, acquiring better and better configurations to provide more access for the currents that flow through them" (5). This law is used to predict and explain the movement of rivers, the patterns formed by tree branches and root systems, the growth patterns of microbes, and the pathways formed in the instant that a bolt of lightning arcs across the sky and touches the ground. Indeed, CL is remarkably consistent in the natural world, with example after example of its ubiquity, from snowflakes to networks in a leaf. In addition to following constructal law, these cases also obey the laws of thermodynamics as applied to natural systems. In particular, the Second Law of Thermodynamics posits that energy flows from locations of higher states to those of lower ones. This explains another source of "flow" seen in nature, from convection currents in the atmosphere, the heating of food as it bakes in an oven to the cooling provided by the radiator in a car engine. There is

even the expression "nature abhors a vacuum," which illustrates the tendency for flow to naturally occur to restore equilibrium.

Beyond *physical* phenomena, can construcal law also explain *social* patterns? Bejan and Zane claim that it can, asserting that CL encompasses information flow and human organizations (46–47). However, a review of the literature reveals that human social structures sometimes defy CL. Though our engineered systems, such as traffic patterns and road distribution networks, are clear examples of CL's principles at work, other systems are not—or at least there are contradictory forces also at work that are unaddressed by CL alone. If flows tend to go from areas of high concentration to those of lower, then why do we commonly observe cities where a fairly affluent area is only a few blocks away from a subsidized housing project? Not only do these conditions exist, but they can persist in a steady state of gritty contrast for decades. According to CL, we would expect there to be some "flow" of information, best practices, educational opportunities, or financial resources occurring that would somehow work over time to minimize these stark differences. Yet, often the unequal conditions endure despite the best-intentioned efforts to create balance and flow.

Contradictions to CL's predictions also exist in the social uptake of innovations. It would be logical to assume that human innovation will be adopted where and when it is most needed. This

"flow" is particularly expected when innovation occurs among seemingly moral human beings who are suddenly given the capacity to alleviate the suffering of people for whom they are responsible. Though such flows may occur, they do not happen consistently. Innovations, Rogers repeatedly shows, can be ignored or undermined to the point that the cures to various diseases have been dismissed for generations in favor of maintaining social norms (7). So, when we seek to understand the process of social change, the claims of constructal law alone do not explain the process by which it occurs. Something more is needed.

Addressing Knowledge Gaps to Better Understand Human Flow Systems

Adding the influencing phenomena of human choice and thought to the framework of constructal law helps it more fully explain flow in human social systems. Choice and thought are inherent parts of the human flow model because they act as gateways to any flow that is to occur. Humans, acting as individuals, can (1) opt into a system of behavioral flow, (2) remain unmoved and therefore opt out, or (3) through clever policies that act upon psycho-social factors, be "nudged" into making choices (Thaler and Sunstein 6-8). One simple example of constructal law in action is sports fans performing "the wave" in a stadium. Each individual voluntarily opts into the action as they recognize the event on the other side of the stadium. They voluntarily plan to give up their "separateness" to become part of a larger, coordinated action. Some authors have coined the aptly descriptive term "social organism" to describe the coordinated actions of individuals who make up a larger whole, in itself acting as a single organism (Levine 239; Elwick 35; Christens et al, 229; Strassman and Queller 605; Goodall 231). Further exploration of this phenomenon that exists all around us requires some fundamental constructs to be defined.

These constructs are psycho-social bonds, communication, empathy, and morality. For the individuals in the sports stadium, the psycho-social bond is the shared social identity of being fans enjoying a sporting event. The dominant contextual factors are not race, ethnicity, and language, but rather an affinity that makes people see themselves as extended members of teams engaged in an athletic competition. The term "psycho-social" is meant to describe the overall psychological and social factors that are a part of every human being's reality and to which they respond. These factors affect how a person perceives, cognitively processes, and responds to the combination of their inner thoughts and the outer world's events and people (Peterson 54; David and Hofmann 115; Toker and Avci 1157). Psycho-social factors include biases, predilections, preferences, self-identity (profession, gender, ethnicity, sexual preference, etc.), and any other factors that we all carry and that shape our attitudes and behaviors.

Communication is another factor that is essential when discussing social interactions. It is how we connect with one another, coordinate activities, and share ideas. Communication takes many forms: linguistic (spoken or written words), aural (e.g., tone of voice), gestural (e.g., body language, winks, nods, and hand signals), visual (e.g., drawn pictures), and more. If the existence of flow is the defining feature of any living system, then human social systems "live" by flow that depends upon communication. From this perspective, we can even redefine communication: its ultimate and perhaps its only purpose is to create and sustain flow within our social systems. Without it, we are no more than isolated individuals living in close proximity. Communication therefore makes human society.

In review, flow occurs in social systems along the pathways of information being shared and actions coordinated among groups of people. Unlike the flow of a substance such as water or oil, the flow of information and the coordination of actions among people are subject to psycho-social factors, which shape the interpretation and processing of information passed between people. The transfer of information and ideas is how people connect with one another. From this communication, we form connections and, as research has shown, subsequently extend the boundaries of concern and trust from our own selves to include others (Glanville et al. 545). This extension of concern to others is a fundamental basis of empathy

and the documented term "proximity" (Morris and McDonald 717). It is important to note that research also shows that the proximity between individuals and groups making moral decisions can be a factor, where "proximity" is measured in terms of physical and emotional nearness between people (friends, family, neighbors, etc.) (Jaffe and Pasternak 53–55).

Empathy may be defined as "the ability to see, feel, respond [to], and understand [another's situation] as if one were the other person" (Weinstein et al. 247). In lay terms, it is the ability to put oneself "in another's shoes." It is posited here that empathy is a key social "bonding agent" between people that causes them to give due consideration to the thoughts, feelings, and wellbeing of others. The absence of the ability to feel empathy means that a person does not respond according to expected norms and, consequently, does not fit the web of our society. These people interact with others, but without the concern or true connection that others may expect or wish for. In sum, empathy and forming empathetic connections are both common and expected features of human society.

It may also be pondered just why people seek out others—how is it that we as human beings create larger bodies that we call societies or social organisms? The term for this characteristic is synchrony, which is hard-wired into the human brain. Neuroscientists have ascertained that the human brain naturally seeks out and synchronizes with other brains (Wheatley et al.

594–96). This trait allows for large-scale coordination of masses of people (Wiltermuth and Heath 1), noted above in the behavior of sports fans in a stadium. Further, it makes possible the formation of armies, global corporations, and governments. The tendency to form a "social organism" is fundamental to being human and underpins the occurrence of flow between groups of people. We are literally designed to be part of larger flows, to be part of something larger than our own selves.

So, if how we connect with one another depends upon psycho-social factors, and if empathy varies according to these factors and the degree to which we share flow (i.e., connection) with others, then what of morality? As profound a component as empathy may be, morality is just as important. Morality has been defined as "a considered opinion of what should be done . . . when confronted with an ethical dilemma" (Morris and McDonald 715). In the field of evolutionary psychology, human morality has been theorized as an adaptive response to living in social contact with others. Human interactions, envisioned as a system of flows, can be compared to the flow of cars that occurs smoothly and continuously because of organizing rules that define the movements. By following the "rules of the road" as a coordinating framework, a great volume of interactions, travel, and commerce can occur efficiently and economically. Likewise, observing rules of morality allows social transactions to occur continuously and in relative harmony. Morals (i.e.,

cognition, heuristics, norms, or culture, depending on the scholarly field), like rules of the road, not only are reciprocated but also allow humans to interact with one another on a sustainable basis (Gintis et al. 242). If we did not follow such rules—if morality were to break down among interacting people—the glue which sustains normal relations would be compromised and the web of society weakened.

Though much can be said about empathy and morality and how they relate to social flows, a few key points will be made briefly. First, under certain conditions, individuals sharing empathetic ties have been shown to communicate more efficiently than those who do not, especially when the communication is based on terms and concepts unique to their empathetic bond (Weinstein et al. 247). Studies have also shown that social connections create greater trust between individuals (Glanville et al. 545). We can therefore make a logical connection between the construct of proximity, empathetic bonds, and social connections. In support of this association, substantial research shows that empathy is related to moral consideration and decision-making (Shelton and McAdams 923; McDaniel et al. 37; Masto 74). Also, though empathy and proximity appear positively related to moral decision-making (Morris and McDonald 723; Oceja 176), they can lead to unjust outcomes when the decision-maker must choose between two parties but feels more connected and empathetic toward one of them (Oceja 176). So, empathy or proximity

can be essential to moral judgments, but interventions are sometimes necessary to counteract bias effects in the decision-making process when there is an imbalance of connection between parties (Oceja 176). Another complication occurs when significant power differentials exist between groups; this will be discussed later.

Relevant Constructs, Citations and Theoretical Implications

Construct	Citations	Implications for Theory
Synchrony – confirmed by neuroscience, the human brain seeks out & synchronizes itself with others allowing large-scale coordination of masses of people	(Wheatley et al. 589)	Society may be conceptualized as a flow system with individuals as its building blocks. Neuroscience shows the individual human brain is designed to link up with others in large-scale networks.
Morality is argued as an evolutionary trait integral to human beings as a social species	(Gintis 241)	Morality is a reciprocal feature naturally extended to members of the same network
Social organism – individuals merge into a larger entity itself that can be conceptualized as an organism	(Levine 239; Elwick 35; Christens et al. 229; Strassman & Queller 605; Goodall 231)	Because flow within organisms is a scientifically accepted phenomenon, the scholarly conceptualization of human society itself as an organism lays the groundwork for the assertion of society as a flow system
Social Connections create greater trust between individuals	(Glanville et al. 545)	Social connections can be seen as pathways that create flow networks. It is posited in our article that people sharing flow pathways enjoy greater trust, empathy and moral consideration towards one another.
Empathy and efficiency of communication – under certain circumstances, individuals sharing empathetic ties communicate more efficiently than those who do not	(Weinstein et al. 589)	Communication may occur more efficiently/readily along empathic pathways.

A relationship exists between empathy and morality/ moral consideration	(Shelton & McAdams 923) (McDaniel et al. 37) (Masto 74)	If people share greater empathy towards those in their networks or self-described group, then they likely extend to them greater moral consideration. This opens a dark possibility that there is less empathy and less moral consideration extended to those outside their networks or self-described group.
Facets of moral intensity (proximity/empathy and social consensus) have an empirically proven relationship to making moral judgments	(Morris & McDonald 717, 723)	If moral intensity is higher for people within the same flow network (or self-described group), then there is more likelihood to have morally-sound judgments. It is arguably more likely that immoral judgments will be permissible towards people outside our flow networks or self-described group.
Empathy can lead people to make immoral decisions because they do not empathize sufficiently with one side vs. the other. This is a tendency that can be counteracted with deliberate action	(Oceja 176)	There is a danger of decision-makers over-empathizing with one party to the detriment of others. It could be posited that social groups are defined where empathy and moral consideration drops off at group boundaries. This drop-off is explainable because of decreased moral intensity (Morris & McDonald, 1995, above citation).
Empathy can result in increased ethical decision-making	(Dietz & Kleinlogel 461)	
Moral exclusion – when individuals "otherize" another group-- they deem them unworthy of the same moral consideration as themselves	(Fernando & Jackson 24)	It can be posited that flow boundaries can harden over time so that networks deliberately exclude other groups (social "tectonic plates"). Hardening can occur due to long-standing disagreements that have developed organically (ethnic groups, religious factions, etc.) or externally-imposed social arrangements (apartheid, caste systems based on social status, gender, sexual orientation or for soldiers in war zones, etc.).

People placed in positions of power over others may be more likely to inappropriately use that power, demonstrating moral exclusion and lack of empathy	(Haney et al. 1)	Power can have a corrupting influence in human interactions, characterizing the flow between groups with both a lack of empathy and due moral consideration.
Though factual evidence presented in their landmark 1973 research showed the potential deleterious effects of conventional prisoner-guard arrangements, the results were generally not heeded. Criminal justice policy and enforcement has in some ways exacerbated unequal outcomes in the years since.	(Haney & Zimbardo 722)	It appears the psycho-social factors operant in our society's policy-making process show an empathetic disconnect between decision-makers and those most directly affected by policy outcomes, itself a societal-level demonstration of the lessons learned from Stanford's prisoner experiment.
Rituals affect cooperation among people	(Fischer et al. 115)	If society is about flow between people, it appears wherever rituals (esp. ones considered sacred) are performed, flow networks can be more easily created)
Social connection is increased through participating in synchronized/coordinated body movements	(Marsh et al. 320) (Wiltermuth & Heath 1)	Think of Japanese employees exercising together before work, military organizations globally exercising and drilling together, boys at St. Benedict school in Newark, NJ (60 Mins, Mar 20th episode)
Empathy-based partiality can be counteracted by drawing attention to norms of fairness	(Oceja 176)	The unequal outcomes of empathy differentials in society can be countered by first framing decisions within a framework of fairness

Table 1: Social Theory Constructs and their Implications

The key takeaway is that these re-search findings, if placed within an inclusive theoretical framework, could help explain many commonly observed social behaviors. In summary, the research states that (1) the human brain is predisposed to seek out and synchronize with other human beings in networks, (2) various psychological and social factors influence how we interact with one another and interpret interpersonal communication, and (3) when people connect and form networks, certain of the psycho-social factors are reinforced and maintained as part of ongoing relationships (trust, empathy, moral consideration, moral inclusion, and proximity). These factors have been called pro-social tendencies (Cadenhead & Richman 170; Carlo et al., 675; Cuardrado & Tabernero 1). It appears that the gateway to forming connections is psycho-social factors: our perception of the world, desire to connect with others, expectations, motivations, ability to be influenced by others, desire to be liked, personal biases and predilections, and a host of other factors impacting the behavioral processes of connection, decision, and perception.

Understanding the Distorting Influence of Power

The famous Stanford prisoner research showed that powerful, distorting tendencies in human behavior can occur when otherwise normal, mentally balanced individuals are placed either in roles of clear power over others or in roles of abject subordination (Haney et al. 1). Thus, human behavior (or "flows") can be distorted by strong power differentials. The participants in the Stanford experiment were all university students who were pre-screened for mental health issues and who were aware they were involved in a social experiment. However, as the scholars stated in a follow-up article twenty-five years later, "Our planned two-week experiment had to be aborted after only six days because the experience dramatically and painfully transformed most of the participants in ways we did not anticipate, prepare for, or predict" (Haney and Zimbardo 709). If we combine these research insights about the distorting effects of power imbalances with those about empathy's influence on moral decision-making, we may be in a better position to understand events in our headlines, both domestic and international.

These collective research insights and the behaviors they appear to explain give rise to a new theoretical framework, Social Affinity Flow Theory (SAFT). According to SAFT, human society is a flow system formed by shared psycho-social connections; accompanying pro-social factors (e.g., empathy) are reinforced where flow occurs. Communication is how flow pathways are initiated, maintained, and modified. When pathways are curtailed between groups, empathy differentials may result and become reinforced, with inequality between groups becoming a cultural feature over time. In such unequal power relationships, flows can

have injurious effects. These power relationships can become even more injurious when codified into institutional policy. Further, those attempting to create new flow pathways (including behavior change) must encourage participants to identify and challenge existing psycho-social factors and flow patterns before new flow patterns can become lasting cultural features.

Because SAFT is a social theory, it applies to an array of human social fields, including communication. Importantly, we expect that SAFT will help identify ways for the communication of messages, regardless of medium, to generate discussion that best facilitates the flow of positive ideas and minimizes the negative flows that often dominate discussions between groups that may differ not only in opinion but also in ethnic, tribal, generational, and other affiliations. These convergent communication strategies—setting aside perceived incompatibilities and emphasizing areas of compatibility—have been shown to foster appreciation between groups that might otherwise focus on the differences between each other rather than on common interests (Gallois et al. 123–126). A form of communication crucial to increasing positive flow is mass media.

Multiple mass communication media have been shown to foster an agenda-setting effect, like the ability to focus the public's attention on a small number of issues (McCombs 544–545). Similarly, we can observe a cultivation effect, such as television's contribution to the conceptions of reality its viewers

form through the repeated presentation of ideas and issues (Gerbner 180). From newspapers and television to the Internet, mass media's influence over ideas in the public forum continues, shaping not only *what* large groups of people think about but also *how* they think (McCombs 546). Media portrayals of events and social groups can cultivate and exacerbate unrealistic perceptions of violence within certain populations, communities, or regions. For example, long-term reporting on violent events or social stereotypes in a particular region may lead to audience perceptions that the region or its inhabitants are more dangerous than statistical data actually show them to be (Gerbner 182–185).

An ethnographic approach to the broad landscape of communications may shed insights that help researchers better understand information flows in our diverse global social media environments. Communication can be considered the foundation for the existential framework of organizational and group identity, as social organisms, groups, and organizations are in a constant state of flux that must be accounted for (McPhee and Zaug 29). Policymakers should heed qualitative research about specific groups and the customs within their respective cultures before making attempts to alter existing social systems based on statistical analysis alone (Pacanowsky and O'Donnell-Trujillo 115–130). For example, making the effort to objectively observe and document human cultures from corporate, organizational, regional, and migratory

human populations' perspectives can help identify situationally relevant customs and psycho-social factors that might not otherwise be apparent. Truly knowing the audience on the receiving end of attempts at persuasive communication can often increase the likelihood of desired long-term behavioral changes (Petty and Cacioppo 5–7). Below is a summary of communication constructs and their possible implications for SAFT.

Communication Constructs and Their Implications

Construct	Communication Citations	Implications for Theory
Coordinated Management of Meaning – Our social worlds are made up of selves, relationships, organizations, communities, and cultures that are constantly negotiating message meaning.	(Pearce 40-53)	Communicators must be mindful of all dialogue participants for the creation of a social world that reflects the communicator's intended norms.
Social Judgment Theory – Every new idea presented to an individual is immediately compared with their present point of view and will fall within latitudes of acceptance, rejection, or non-commitment.	(Sherif et al. 222-225)	Persuasion is a gradual, incremental process but influence can be maximized through message selection based on knowledge of the audience's attitudes toward new ideas and their likely latitude of acceptance, rejection, or non-commitment. See Model 1
Elaboration Likelihood Model – Persuasive messages are processed along a spectrum by a central route (audience actively considers issues presented), or a peripheral route (audience processes a message without active thought and relies on external cues such as likability of the message presenter).	(Petty and Cacioppo 5-7)	Message creation and delivery can be tailored according to the ability of an audience to elaborate on complex ideas based on known levels of intelligence/education, or distractions that might make central processing difficult (citizens in warzones will have little interest in processing persuasive messages that don't directly aid in survival)
Cognitive Dissonance Theory – A distressing mental state occurs when people find themselves doing things that contradict what they know, or developing opinions that contradict their current belief system.	(Festinger and Carlsmith 4)	Desired changes in human behavior and attitude can be achieved by providing only a minimum justification for behavioral change which will then affect attitude change. This substantiates psycho-social engagement as key to changing social flow patterns.

Communicative Constitution of Organizations – Communication is the foundation and framework for organizational existence (via membership negotiation, self-structuring, activity coordination, and institutional positioning), and organizations function like living organisms that must constantly process information to survive.	(McPhee and Zaug 29)	Communication flows in many forms throughout an organization like tributaries to a river and is thus always in flux. An organization comes into being at the intersection of different information flows.
Cultural Approach to Organizations – Culture is not something that an organization has, culture is something that an organization is. Organizations are a "web" of employees' performances and shared meanings.	(Pacanowsky and O'Donnell-Trujillo 115-130)	An ethnographic approach to culture allows qualitative research to gain new understanding of a specific group of people and what is needed to best function within a culture.
Communication Accommodation Theory – When persons from different ethnic, age, or cultural groups engage each other, they will tend to accommodate each other through adjustments to their verbal and non-verbal communication to gain the other's approval. Divergent Communication results when speakers feel the need to maintain ties to a group identity.	(Gallois et al. 123-126)	By promoting convergent communication strategies, communication accommodation can be used to facilitate desired, positive outcomes between different cultural groups.
Cultivation Theory – Violence presented in the media can cultivate an unreasonably fearful population and distort perceptions of actual violence.	(Gerbner 175-194)	Quality and content of media communication shapes the psycho-social reality of viewing populations.
Agenda Setting Theory – Media has the power to influence both what audiences think about as well as how they think about it.	(McCombs 543-557)	By understanding the media messages that may have created negative, possibly false, perceptions between seemingly incompatible groups we may be able to more effectively form counter narratives that foster more positive interactions and social connections.

Table 2: Communication Constructs and their Implications for SAFT

Forces of Integration
and Disintegration

To be clear, SAFT is a descriptive and predictive framework of human social behaviors, but it is not necessarily prescriptive. It is morally neutral, so it offers significant insights into understanding a wide variety of circumstances occurring within human societies, whether the behavior is negative (destructive, immoral or selfish) or positive (constructive, moral, or altruistic). Importantly, these negative and positive behaviors have been broadly categorized as forces of disintegration and integration, respectively, both of which SAFT explains. As suggested previously, disintegrative forces encompass destructive behaviors and events associated with decline such as violence, intergroup prejudices, racial bigotry, sectarian interests, prejudice, warfare, widespread corruption, overall social fragmentation, and moral decay. On the other hand, forces of integration are associated with efforts promoting peace, human wellbeing, public welfare, concern for individuals as well as the whole, collaboration between groups, holistic solutions, environmental sustainability, and an ethos of working together to solve problems affecting the whole of humankind. As described by the Universal House of Justice:

> The observable acceleration, during the past decade, of the two processes described by our beloved Guardian, the disintegration

of the old order and the progress and consolidation of the new World Order of Bahá'u'lláh [forces of integration], may well come to be regarded by future historians as one of the most remarkable features of this period . . . Among the many evidences which reveal this process may be cited, on the one hand, the continual increase of lawlessness, terrorism, economic confusion, immorality and the growing danger from the proliferation of weapons of destruction, and on the other, the world-wide, divinely propelled expansion, consolidation and rapid emergence into the limelight of world affairs of the Cause itself . . . (*A Wider Horizon* 3)

It is within this framework of integration and disintegration that SAFT can be seen as a contribution to the field of social science as well as to others, including business disciplines such as management, marketing, and human resource management. Just as economic principles can be used to explain the material wealth or poverty of individuals and nations, Social Affinity Flow Theory helps us better understand forces underpinning the disintegration and integration observed in the world.

Explaining the World as It Is:
Societal Behaviors Predicted
by SAFT

There are eight principles of SAFT that can be used to explain and predict

commonly observed behaviors in human societies around the world:

1. Humans naturally cluster in subgroups based upon affiliations perceived as immediate and personally relevant to their members. The interests and actions of sub-groups tend to be more narrowly focused than the needs of larger organizations. Systemic efforts are needed to align sub-groups' efforts with larger strategic needs. In the absence of such strategic alignment, fragmented networks will exist whose actions may run counter to the optimal functioning of the whole.

2. In the absence of a unifying framework, boundaries between social subgroups can ossify over time to create islands of mutual tension and even alienation. The potential danger is that these groups can have decreased moral consideration across boundaries, yet as members of the same society, they are bound to have interactions with one another. In their ossified state, subgroups coexist within the same society over time like "social tectonic plates." Members of each "plate" maintain their empathic distance from members of other plates, creating a patchwork of enclave communities that can persist for generations while surrounded by members of the larger society (Salbi; Simon and Steichen).

3. A perceived moral transgression by a person from another social "tectonic plate" will often elicit a stronger emotional response from group members than the same transgression committed by a member of their own group. Such transgressions will typically be negatively interpreted and communicated as part of a reinforcing narrative about why the "other" group cannot be trusted. These tendencies can exist in both human societies at large and within organizations ("Pakistan"; Berman and Lowery; Salbi).

4. Because of decreased empathy for members of other "social plates" (empathy differentials), members of one group will tend to show decreased interest in negative events happening to members of groups other than their own. This empathy differential between groups will be manifested as decreased moral intensity. Moral intensity, quickly described, is the degree of perceieved "rightness" or "wrongness" of an action and to what degree some type of ethical remedy needs to be applied to address a perceived wrong. With groups having a decreased sense of empathic proximity to one another, a logical prediction is that moral intensity will be decreased, based on research (Jaffe and Pasternak 54). The first corrosive effect is that decreased moral intensity and empathy, when witnessed, is a wounding experience more widely experienced by one segment of the population while for those belonging to the other group, a form of ethical distancing and indifference can be reinforced as a norm.

5. Empathy differentials over time can become embedded cultural norms as

this trait is taught to new members as a way of being (shared learning). Thus, decreased moral consideration for "the other" is a form of shared learning that is requisite for group membership. In other words, what makes us "us" is that "we" reject affiliation with "them." Intergroup differences, real and/or perceived, are highlighted as the rationale for the alienation between groups. When this occurs, a corrosive effect pervades society with sub-groups living out different social realities and are subjected to different standards of justice, especially when levers of power are also applied (Haney, et al., 1; Haney and Zimbardo 709; Salbi; Simon and Steichen). Even more significantly, these empathy differentials and other negative effects can create a poisonous cycle of repeated woundings as a norm for one group, and for the other, ever more entrenched efforts at distancing that avoids the pain that would come with proximity. One can only imagine the broader societal impact as this culture becomes reflected in institutional policy as individuals from one segment in positions of authority enact government policies reflective of such thinking (DNAInfo; Simon and Steichen; Berman and Lowery).

6. Consistent with constructal law, human society itself acts as a living flow system and will adapt to accommodate flows. Within a human social system, flow emanates from unmet psychological needs and is an attempt to alleviate dissonance. New flows to accommodate these welling psycho-social forces are created through connections with like-minded individuals sharing common cause (tapping into the human capacity for large-scale action through synchrony).

7. At the systemic level, either the existing system has embedded features allowing it to engage and accommodate new flows or third-party actors will arise to create them. A crucial "litmus test" for distinguishing harmful versus beneficial flows (or third-party actors) is asking whether they alleviate or exacerbate empathy differentials between sub-groups, as illustrated by the non-violent civil rights movement under the aegis of Martin Luther King, Jr., versus the hostile and antagonistic Black Power movement that emerged thereafter. The role of decision-makers is to find ways to help the current system adapt to include new flow patterns that widen circles of inclusion and therefore ameliorate "otherness."

8. Divisions and antagonisms within societies can be partially reduced through the initiation of pro-social behaviors among social groups. Such actions, when occurring between otherwise antagonistic groups, can begin a process of unraveling long-held suspicions and mistrust. This unraveling of old norms is a slow process fueled by introspection and by examining old flow patterns and comparing them to suggested new ones and their implications. This process is the core challenge at the heart of fields such as adaptive leadership (Heifetz 22;

Heifetz and Linsky 51; Williams 31-55). However, there may be a price to be paid for those desiring to create such social change. The change agents must risk ostracism from the social group they belong to (see principle five above), whether religious, ethnic, professional, etc. To change or challenge prevailing norms is to risk nullifying the implicit social contract of group support and belonging, as exemplified by the assassinations of Mahatma Gandhi, Anwar Sadat, and Yitzhak Rabin by hardline members of their own groups. As attested both by these examples and by scholars of adaptive leadership, authentic leadership can be a risky and dangerous proposition (Heifetz 235–249; Heifetz and Linsky 9-30; and Williams 64–65).

Connection to Bahá'í Teachings

All depends fundamentally on the training or education which man receives. Human nature is made up of possibilities for both good and evil. True religion can enable it to soar in the highest realm of the spirit, while its absence can, as we already witness around us, cause it to fall to the lowest depth of degradation and misery.
(on behalf of Shoghi Effendi, qtd. in Schaefer 691)

The above quote synopsizes one aspect of our human reality: our ability to engage in altruistic, noble behaviors is largely dependent on the education of character. The Bahá'í teachings assert

that good character is brought about by the influence of "true religion." To be clear, the phrase "true religion" does not imply that one religion is superior to another, at least in terms of the doctrinal forms that are identified as separate religions today. The Bahá'í teachings explain that these various forms are really the unfolding of one common faith from the same Divine Source. The definition of "true religion" is embedded within the above statement from Shoghi Effendi and affirmed in passages by 'Abdu'l-Bahá: the truth of a religion is found in its ability to transform characters, to uplift the behaviors and thoughts of a people. It is a practical definition that assesses the value of religion according to its observable effects on a people. It is these positive, outer effects brought about by true religion that the Bahá'í Faith claims the world is deeply in need of.

By observing many group behaviors today that can be predicted and explained by SAFT (many of which are unfortunately negative), we can also begin to see other possibilities in human interactions. We can trace the outcome of behavior to the mindset (attitudes, beliefs, etc.) held by individuals and groups. The principle of the harmony of science and religion is validated and vindicated by SAFT and, even more prominently and explicitly, in the teachings of the Bahá'í Faith.

For example, SAFT asserts that human beings participate in flow patterns that begin with psycho-social factors that eventually become behavioral flows within society. The Bahá'í Faith

states, "Regard man as a mine rich in gems of inestimable value. Education can, alone, cause it to reveal its treasures, and enable mankind to benefit therefrom" (*Gleanings* 122:1), and "True learning is that which is conducive to the well-being of the world, not to pride and self-conceit, or to tyranny, violence and pillage" (*Education* 17). The second quote implies that lack of true learning can lead to negative outcomes such as pride, self-conceit, tyranny, violence, and pillage, while the presence of true learning is "conducive to the well-being of the world," or in other words, to altruistic behaviors. The above passages also state that "education" and "true learning," which have an impact on a human being's psycho-social reality, produce "treasures" (i.e., flows, behaviors) that will result in "the well-being of the world" and benefit mankind. In other words, the Bahá'í teachings trace the types of flow patterns, both positive and negative, that can arise from the human psycho-social reality, and the outcomes they predict are, thus, descriptions of the forces of integration and disintegration that logically follow. Many skeptics, though acknowledging the forces of disintegration at work in the world, may have difficulty seeing how "true religion" or an educational program infused with "spiritual content" can create different outcomes. The ultimate proof will have to be borne out in results, but in the interim we should examine our perspective on the world around us. While the earlier pages established the theoretical basis

for SAFT and its predictions, many of these predictions were about negative behaviors that are quite evident in societies around the world. But the positive side is that—SAFT asserts—under the right conditions, human behavior can take on more altruistic, holistic patterns with socially unifying, positive effects.

As opposed to the depressing reality we often see, the underlying capacity for this much more positive reality is already here: much in our societies works because of a general sense of belonging, of feelings of connection to one another. Common signs of consideration amongst strangers are the frequently encountered norm. For example, in the case of a bad car accident, it is common for bystanders to offer assistance; or we do small things like holding doors open for those coming behind us, though they are strangers. On a collective scale, millions of cars successfully drive the streets of our major cities without the on-site presence of police officers because a basic level of cooperation exists. There are relatively few accidents, people stop at stop signs, often (but not always) use turn signals, and *usually* give way when they should. So, it is not that the high-minded aims of the Bahá'í Faith are impossible to achieve, because in every society around the world we already demonstrate at least some capacity for living in peace and cooperation. It is that we often take this cooperation and unity for granted and do not embrace social actions that intentionally nurture it. We are presently vulnerable in every society because of what we do

not consciously value with our actions.

This newest world religion strikes at the heart of our common social disease by asserting we can live at an even higher level of cooperation and connectedness via a process of moral and spiritual education, where action is an integral part of the learning process. SAFT is the science that explains how this is possible. The next step is to understand how this science explains aspects of the Bahá'í community-building process.

THE ROLE OF THE BAHÁ'Í TRAINING INSTITUTE PROCESS

Though the teachings of the Bahá'í Faith have remained whole and un-altered since its inception, the Bahá'í community is ever-evolving in its methods of community building. Its most powerful tool currently used to transform society at the local level is the training institute process, which not only teaches the aims of the Bahá'í Faith to participants, whether Bahá'í or not, but explores and gradually cre-ates new patterns of life. The institute's purpose is stated in the first paragraph of the very first book used in the cur-riculum: "to use the courses as means of serving the Cause [of God] and promoting the well-being of human-ity" (Ruhi Institute1). The creation of new patterns of life begins with form-ing new conceptual understandings. Participants in each course study the Bahá'í Writings on various aspects of life and are encouraged to develop, in a group study process, three levels of

comprehension of the concepts and themes. Most of the books in the training series include some practi-cal application exercises that are the basis of a new, more spiritualized life with behaviors such as praying and re-flecting upon words of inspiration and guidance, studying passages from the Bahá'í Writings closely with a friend during a home visit, and teaching chil-dren's classes. Later books include more complementary processes, such as accompaniment, which the Bahá'í community has identified as a way to help foster newly learned behaviors.

Each of these capacities creates or contributes to a new flow process. For example, accompaniment is two or more souls participating in an activi-ty (such as teaching children's classes or working with youth groups) during which each assumes a "humble posture of learning," studies guidance, devel-ops plans, puts them into action in the field, and afterwards reflects on what was learned. The intent is to promote a "culture of learning" within the com-munity where participants are always seeking to improve the methods and effectiveness of their work. Learning among groups is itself a form of flow, the transmission of new ideas and concepts from one person to another, a process described by SAFT and con-structal law.

One of the strengths of the train-ing institute process is that it provides the means for communities, of any socio-economic level, to transform their own patterns of life through the re-creation of the individual and her/

his social surroundings. This Bahá'í approach to community building is being adopted with equal success in rural villages in the developing world and in modern Western cities and surrounding suburbs. It is the unshackling of human potential, free of the dichotomy of haves and have-nots, offering access to the tools of positive cultural change and community improvement without the usual prerequisite of material wealth. Indeed, the Universal House of Justice has stated the training institute is "an instrument of limitless potentialities" (28 December 2010). The House of Justice underscores the importance of the training institute further:

> One of the most effective instruments at your disposal in this respect is the training institute. It strives to engage the individual in an educational process in which virtuous conduct and self-discipline are developed in the context of service, fostering a coherent and joyful pattern of life that weaves together study, worship, teaching, community building and, in general, involvement in other processes that seek to transform society. (23 April 2013)

ROLE OF CONVERSATIONS

SAFT places a focus on communication between people as the means by which flow is created. Though the theory is value neutral and can describe any type of social movement, its most constructive application is to assist members of the Bahá'í community to better understand the work of social transformation they so sacrificially undertake. The beginning of that social transformation begins with the flow of conversation, as stated by the central Bahá'í institution in the latest global plan for social transformation:

> Central to the pattern of action evolving in a cluster is the individual and collective transformation effected through the agency of the Word of God. . . . [T]his process of transformation reveals itself in an ability to express one's understanding of profound concepts and to explore spiritual reality in conversations of significance. . . . Through exchanges of this kind, consciousness of spiritual forces is raised, apparent dichotomies yield to unexpected insights, a sense of unity and common calling is fortified, confidence that a better world can be created is strengthened, and a commitment to action becomes manifest. Such distinctive conversations gradually attract ever-larger numbers to take part in a range of community activities. Themes of faith and certitude surface naturally, prompted by the receptivity and experiences of those involved. (Universal House of Justice, 29 Dec 2015)

The description above outlines a process of social flow that begins with an individual who engages in the work of outreach, finding like-minded

individuals (with compatible psycho-social realities) and engaging in dialogue to create connection. The sharing of ideas is a flow that, at some point and under the right conditions, is translated into action in the form of community building activities (devotionals, home visits, children's classes, junior youth groups, etc.). The psycho-social bonds between people intensify, the substance of this emerging reality becomes confirmed among the participants, and their commitment to it deepens. They in turn reach out to their respective networks of family members and acquaintances to engage in another round of conversations of significance.

The ebb and flow of this activity are described in Bahá'í plans under the framework of expansion and consolidation: typically, conversations and outreach are part of an expansion phase, and the deepening of the newfound friends' understanding and commitment to sustained action is the phase of consolidation. Like a pulsing organism that grows and simultaneously sustains itself from within, this emerging process gradually engages larger and larger segments of the surrounding population. As the emerging community grows, it also continuously adapts to new circumstances, with internal flows occurring within the context of a "culture of learning." Such a culture is essential and the mechanism that creates it is consultation, deemed so fundamental a skill for the emerging community that it warrants its own book in the Bahá'í training institute.

Though it is beyond the scope of this article to delve into consultation, within the theoretical framework of SAFT, consultation is the means to smoothly create flow among small groups of people, so that the pace and effectiveness of learning can be maintained with minimal impediment. It may be surmised that the successful emergence of the Bahá'í enterprise partly depends on the collective ability of its members to adapt to changing conditions, and adaptability depends on a culture of learning. In turn, this culture's hallmark is having an environment where ideas can be readily shared and new insights identified and then implemented by its members.

Using SAFT to Understand Elements of the Bahá'í Global Plan

The preceding sections discussed the science behind human connection and flow. They also established a theoretical framework for understanding many of the social issues plaguing humankind around the globe. SAFT can explain the spread of mass unrest in Pakistan following a military strike by a foreign power while a bombing by domestic terrorists that kills multiples many more people does not elicit the same intensity of response (Masood and Ihsanullah; "Pakistan"). It can explain why, over a particular German holiday weekend, roving bands of North African refugee men allegedly assaulted a large number of European women (Huggler) when they arguably

would not have behaved this way in their country of origin. It can predict the resulting backlash of intensified rhetoric from right-wing political parties that rally others with anti-immigration slogans. It can explain how, in a U.S. Midwestern city, the municipal court system and law enforcement was found to have for years systematically raised revenue by disproportionately charging minority and poor citizens with crimes and assessing court fees and fines (Berman and Lowery).

In contrast to these examples of social dysfunction and conflict, the Bahá'í community—both globally and locally—is slowly learning collaborative practices to offset antipathy and implement, by degrees, the Bahá'í vision of an ever-advancing civilization. This is a tremendous undertaking, one that will take many generations to achieve. Yet, we can look at this religious community as being at the forefront of global initiatives to create communities where diversity is celebrated and connections are fostered between peoples of various age, ethnic, gender, and other backgrounds. The process is one that will require the raising of human consciousness and the connecting of hearts and minds. Further, it entails ongoing societal transformation with lessons identified and shared on a a global scale, a supreme degree of perseverance, and a continuity of effort spanning centuries in order to be consummated. Yet, we see in the very beginnings of this audacious effort the seeds of such transformation.

The genesis can be seen in its early days in the nineteenth century when its Founder, Bahá'u'lláh, His son, 'Abdu'l-Bahá, and Their families and close friends were banished to the prison city of Akka (now in Israel). Surrounded by criminals and a hostile populace who had been ordered to strictly shun them, in the beginning conditions were so harsh that several members of their band died from disease and the poor quality of food. As recounted by Shoghi Effendi, the authoritative chronicler of this history, "Three loaves of black and salty bread were assigned to each, which they were later permitted to exchange, when escorted by guards to the market, for two of better quality. . . . All fell sick, except two, shortly after their arrival. Malaria, dysentery, combined with the sultry heat, added to their miseries. Three succumbed, among them two brothers, who died the same night, 'locked,' as testified by Bahá'u'lláh, 'in each other's arms'" (Shoghi Effendi 187).

Yet a few decades later, the inhabitants of the city and even international officials were so transformed that at the funeral of 'Abdu'l-Bahá, thousands were in attendance and paid tribute:

The British Secretary of State for the Colonies, Mr. Winston Churchill, telegraphed immediately to the High Commissioner for Palestine, Sir Herbert Samuel, instructing him to "convey to the Bahá'í Community, on behalf of His Majesty's Government, their sympathy and condolence.". . . Many

and divers newspapers, such as the London "Times," the "Morning Post," the "Daily Mail," . . . and others, in different languages and countries, paid their tribute to One Who had rendered the Cause of human brotherhood and peace such signal and imperishable services. (Shoghi Effendi 312)

And of the funeral service for this eminent Bahá'í Figure, it was

a funeral the like of which Palestine had never seen—no less than ten thousand people participated representing every class, religion and race in that country. . . . The long train of mourners, amid the sobs and moans of many a grief-stricken heart, wended its slow way up the slopes of Mt. Carmel to the Mausoleum of the Báb [where 'Abdu'l-Bahá was to be interred]. (Shoghi Effendi 312–313)

Despite reversals and difficulties, this small band of Bahá'ís had overcome their initial mistreatment, largely because of the consistent acts of selflessness, charity, and nobility of character demonstrated by 'Abdu'l-Bahá over the years, as attested repeatedly and widely by His contemporaries.

Thus, from this example, it appears that over time, overt acts of charity, selfless service, and loving kindness can have a role in breaking down barriers of suspicion and the social disease of "otherness" between peoples. This does not mean that these acts alone

are the entire prescription or that there will not be setbacks. However, they are an indispensable component of social transformation. We could even observe that Bahá'u'lláh's encouragement to His followers to associate with the "followers of all religions" in a spirit of "loving kindness" is the express, direct antidote to some of the social separations of our age.

Within the Bahá'í religion, efforts to serve and unify humanity are now overseen by the institutions of its Administrative Order, under the lead of its Universal House of Justice. In the latest global plan of the Bahá'í Faith, unfolding from 2016 to 2021, it states:

A broader cross section of the population is being engaged in conversations, and activities are being opened up to whole groups at once—bands of friends and neighbours, troops of youth, entire families—enabling them to realize how society around them can be refashioned. The practice of gathering for collective worship, sometimes for dawn prayers, nurtures within all a much deeper connection with the Revelation of Bahá'u'lláh. Prevailing habits, customs, and modes of expression all become susceptible to change—outward manifestations of an even more profound inner transformation, affecting many souls. The ties that bind them together grow more affectionate. Qualities of mutual support, reciprocity, and service to one another

begin to stand out as features of an emerging, vibrant culture among those involved in activities. (29 December 2015)

Given the apparent divisions and disunity in the world, we cannot take for granted peaceful coexistence among diverse populations. Because injustice often occurs because of the social distance between groups of people as seen in many historical examples (and now explained by SAFT), we should make it an explicit aim to reach out to one another *because* we are different. The Bahá'í admonition to engage in warm fellowship with all people, to overlook flaws, to share with them a spirit of love and kindliness, is not just a warm sentiment standing in contrast to the reality of every society around the world. It is a powerful prescription for our social ills.

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Biographical Notes

JUSTIN R. EDGREN is an interdisciplinary artist and researcher who received his MFA from Southern Illinois University Carbondale and holds BA degrees in political science and music. He has over twenty years of professional consulting and educational experience in politics, business, communications, and the arts. He currently serves as Department Chair and Associate Professor of Communication at Lindenwood University-Belleville.

DR. CHRISTOPHER GOURDINE currently serves as the Assistant Dean for Business Administration at Maryville University's John E. Simon School of Business and is an ASQ Six Sigma Black Belt. He has taught a wide variety of courses including business analytics, operations management, employee training and development, organizational behavior and strategic management. He is a prior military officer and Air Force pilot with a twenty-year career in managing US domestic and international operations.

After graduating from Rhode Island School of Design (BFA-Painting) in 1983, GARY HEISE studied traditional Chinese ink painting with the Taiwanese-American painter Liao Shiou-ping. Since then he has continued to investigate and practice Chinese brush painting, combining with it his background of Western painting and sensibilities.

Heise works with Chinese ink and watercolor, drawing inspiration from his local landscape of northern New Jersey and the surrounding Hudson River Valley to communicate a personal reaction of the landscape experience. Seen in this light, each painting is not only a depiction of the natural world, but a reflective self-portrait as well.

TODD SMITH is a sociologist and philosopher from Canada specializing in social theory. He received his PhD from the University of Toronto focusing on the development of a consultative epistemology particularly as it applies to health, illness and disease. Since obtaining his doctorate, he has been engaged in a variety of educational endeavors and has served full-time on Bahá'í administrative bodies at the regional and national levels. He is currently the Coordinator of the Research Department at the Bahá'í World Centre.

DR. THOMAS L. TRICE currently serves as the MBA Program Manager and Associate Professor of Business at William Woods University. Dr. Trice is dual-disciplined and has taught a number of Criminology and Criminal Justice courses. Beyond his academic background, Dr. Trice has more than twenty-three years of leadership practice at the city, county, state and federal level of government. His research

interests are leadership, organizational change and strategic management.

SHOLEH WOLPÉ is an Iranian-born poet, writer and literary translator. She is the recipient of a 2014 PEN Heim, 2013 Midwest Book Award and 2010 Lois Roth Persian Translation prize as well as artist fellowship and residencies in the U.S., Mexico, Spain, Australia and Switzerland. Wolpé's literary work includes five collections of poetry, several plays, three books of translations, and three anthologies. Her most recent publications include *The Conference of the Birds* (W.W. Norton & Co), an excerpt of which appeared in a previous edition of this journal, *Cómo escribir una canción de amor* (Olifante Ediciones de Poesia, Spain), and *Keeping Time with Blue Hyacinths* (University of Arkansas Press.) Her new play, an adaptation of *The Conference of the Birds*, premiered at The Ubuntu Theater in Oakland California.

JOSEPH M. ZLATIC currently serves as the chair of the Department of Criminal Justice at Lindenwood University-Belleville. His work focuses on the evaluation of community-based correctional programming and the implementation of evidence-based practices. Prior to his academic appointment, he served the US District Court as a community supervision officer. He has engaged in policy evaluation and advisement at the national, state, and local levels.