Physicist David Bohm and biochemist Ilya Prigogine began a dialogue that implied a deep, structuring, primordial harmony within life. In classical Chinese this harmony is referred to as Li (理), which also designates the elegant, natural pattern found in jade. This article emphasizes the ways that perception of primordial harmony gives way to a vision of possibility and to the creative intelligence and action necessary for meeting the challenges we face. Insights from Bohm, Prigogine, and others on releasing outmoded thinking and actions are integrated with contemplative traditions, Eastern and Western philosophy, and pragmatic strategy making.

KEYWORDS: Bohm, contemplative traditions, creativity, implicate order, Li, neo-Confucianism, Prigogine, reflection, sustainability, Taoism, unfolding

People’s newfound hopefulness is important, because the kind of transformation we seek will never spring from pessimism and despair. Climate disruption may be scary, but fear is not our friend. Fear is a force that traps us in the past. (Brune, 2016, p. 4)

INTRODUCTION

Nobel Prize–winning physicist Ilya Prigogine was an unshakeable optimist when it came to the ability of nature to self-organize and adapt, even in crises conditions. He based his optimism on observation of the “fundamental trend” within nature, a capacity of life itself to continually adapt, adjust, and, at times, to radically transform in ways that maintain a maximal vitality and freedom to explore new possibilities (Prigogine, 1994, p. 35). Prigogine posited that this “self-organizing” capacity was present not only in the natural world but in human systems and society. He believed that the methods and assumptions of classical science had
resulted in a loss of the capacity to recognize this thrust, resulting in an artificial separation of the human being from the natural world. As this separation has carried over into dominant ways of thinking in modernity, Prigogine emphasized the critical importance of regaining a sense of communion with life, attained by a radical challenge to the assumptions of classical science, specifically with regard to the nature of time, the recognition of the human being as embedded within life rather than standing apart as an observer, and, consequently, the critical importance of realizing how human thinking and actions affect the whole of life.

In explaining a new paradigm with respect to matter, nature, and time, Prigogine identified the “dissipative structure,” a system that is able to transform—given certain proper conditions—within chaos and near-chaos conditions. This structure could only be recognized when one moved away from the classical view of time as a constant, and instead embraced the arrow of time, moving from past toward the future, and thereby able to bring forth a dynamic image of change in a system. Prigogine and Stengers (1995) observed that when successful “dissipative self-organization” occurred, the system made use of this high intensity to bring forth experimentation and also a capacity to choose configurations from this experimentation that were in greater harmony with an overall order. Consequently, the emergent configurations would be more efficient in terms of their exchange of energy and information with their environment (p. 50, 225–230).

Prigogine’s observations of natural systems provide us with a metaphor and vision of possibility within the midst of the many challenges we face related to the environment. As we will explore, the vision and possibilities can only emerge if we better recognize that our near-chaos conditions can create further problems by continuing to invite innovation and creativity that is out of harmony with a natural order, or can, when guided by an alignment to this order, lead us toward a flourishing way of life.

ALIGNING CREATIVITY AND INNOVATION WITH THE IMPLICATE ORDER

When applied to issues related to ecological conditions, the critical issue is whether the changes we bring forth in the world are aligned with the natural harmony of life itself. For the exploration of this issue, it is helpful to explore the understanding put forth of natural order by another scientist, David Bohm.

The work of Bohm (1980) on wholeness provides a background for understanding the ways that living systems can best meet intense transitions. To Bohm, wholeness—as contrasted with fragmentation—is the very nature of the universe. Therefore, aligning with this wholeness, in a process of transformation, would be most natural. Yet, because of a tendency toward fragmentation that occurs both in natural systems set on self-preservation and also in our thinking, there is a tendency to act or innovate from a place of fragmentation—serving the interest of the fragment—rather than acting in a way that benefits both the whole and the fragment.
Bohm’s work in quantum physics led him to the explorations of deep structures that stand behind the physical and psychological dimensions of life. He identified wholeness as an “implicate” order, which could have an influence on physical, mental, metaphoric, and spiritual levels of being. The implicate order, as unfragmented could be described as the maximal interconnectedness of all domains of existence.

Much akin to the views of Prigogine, Bohm realized that our present day attempts to view a system in nature through the lens of science would usually result in “misinformation”—a partial view—missing the “wholeness” and integrity of the object of study (Bohm, 1980, p. 239). The same would be true within human systems (i.e., individuals, groups, and organizations): Understanding of the whole and of information is fragmented as Simon (1962) notes, by policies, plan, and organizational structures.

To Bohm, our future demanded creative intelligence, especially that creativity that emerged from an unfragmented view (i.e., from wholeness). To remain unfragmented the creativity had to remain free from conditioning. The conditions for the emergence of creative intelligence were directly akin to—and perhaps identical with—the kind of conscious reflection or meditation that “allows” thinking that transcends categorical divides. The only difference here is that Bohm emphasized that these states or modes of thinking, reflection, and meditation had to be attained on a collective level. In this regard, Bohm suggested the use of dialogue groups to allow individuals to move toward a very creative and free-flowing communication process—an inclusive, nonhierarchical process—not giving preference to certain individuals because of their psychological maturity or self-realization or self-awareness. In Bohm’s view, each individual within such a dialogue would necessarily add an element that allowed the entire group to reflect more of the wholeness within which the group was embedded. (For more specifics on the contributions among different levels, see Bohm, 1980, pp. 269–271).

To Bohm, the kinds of creative thinking—and, to go a step further, solutions to problems and innovations—that would emerge from this process were natural movements of life toward possibilities of greater harmony and beauty. This is a point of integration between Bohm and Prigogine, both reflecting the idea that the “fundamental trend” of life, while not deterministic, was characterized by a movement toward a greater state of elegance (“elegant” in terms of beauty, harmony, and efficiency in employing information and energy in a way that benefitted both the system and its environment). A further exploration of such a movement toward elegance is found in Smith (2010).

Bohm and Prigogine were in dialogue (Griffin, 1986). They understood the relevance of each other’s theories in relation to their own, and yet did not have the opportunity to work out some of the difficult representation issues—in terms of mathematic and formula—of the links between the implicate order and dissipative structure. Yet there is a logic implied in dissipative self-organization that
connects the theories, and provides an explanatory model of evolution: The notion that a system that approaches chaos is able to evolve and not regress or otherwise randomly reorganize at a simpler level, necessitates that there must be some deeper or “implicate order” in the process. Otherwise, as Jacob Bronowski (1977, p. 173) noted, there can be no evolution without a “barb” to prevent the system from sliding backward.

VISIONS OF POSSIBILITY BECOMING CONCRETE REALITIES

While the works of Prigogine and Bohm are theoretical in nature, both of these scientists were very interested in how their theories played out in the world. To explore this further, we turn to some principles recently described by Nonaka and Zhu (2012) with respect to “purposeful emergence” resulting from pragmatic organizational strategies. In their application of Confucian principles of harmony to organizational strategy, Nonaka and Zhu (2012) have captured something of the way an organization can “reference” the deeper or implicate order in all stages of strategy formulation and implementation.

Nonaka and Zhu recognize that three domains of “exemplary doing” must be involved to bring forth a strategy that is in harmony with the deeper structure of life, with “the Tao” (way-making) that joins sageliness within to kingliness without (Nonaka & Zhu, 2012, p. 171). The three domains identified, wuli, shili and renli, share the root word Li. As noted in Figure 1, these identify objectively physical, intuited mental, and interpersonally relational domains that must somehow be harmonized so that strategy aligns with its natural order.

The common root, “Li” which in modern language might simply refer to a harmony, had early usage in the identification of the “pattern in jade.” In terms of practical and ethical dimensions, Confucius uses the concept of Li to identify

The Principle of Li

In the Chinese language, the word Li (理) can be used as a verb to mean: to engage, to do, to manage, to order. As a noun, texture, pattern (perhaps originally and specifically, the pattern in jade). In use it can mean, doing things in a proper way, “making things better”, perhaps an elegant approach to management.

Recently, Nonaka and Zhao have provided a comprehensive and integrative approach to business strategy based on three dimensions of Li:

Wuli 理, managing material and technological objects,
Shili 理, managing of consistency in paradigms or meanings,
Renli 人理, managing of relationships.

Figure 1. The Principle of Li, adapted from Nonaka and Zhu (2012).
those aspects of behavior or action that would naturally be in harmony with life, and, thereby ethical and benefitting to all. The implication here is that such an identification would—at least to one who was in touch with “the Way”—not be via a fixed rule or ethical code, but through a self-revelatory process. To the one “who had eyes to see,” plans and actions would be realized immediately to be in harmony or not in harmony at the physical, mental, or relational level. Only when such a harmony at all three levels was realized, would there be sufficient evidence of an alignment with the primordial level. Paralleling Bohm’s thinking, Li—here metaphorically described as the primordial “pattern in Jade”—represents thought and creative intelligence that springs from the underlying or implicate order, and is the medium through which truly meaningful creative intelligence impacts our world.

IMAGES OF A POSSIBLE FUTURE VIA THE WORK OF PRIGOGINE AND BOHM

When there is no vision, the people perish. —Proverbs 29:18

While the progressive integration of new paradigms within science may take years—and sometimes never are fully accepted—the understanding, meaning, and potential applications of such work as that of Prigogine and Bohm must not escape us. Bohm and Prigogine’s attitude toward the crises we face is of foremost importance. Both would realize that these crises contain potentialities seeking expression. Both would suggest that to recognize and take advantage of these potentialities we have to better face the deep fragmentation in our ways of thinking and meeting problems. We need ways of freeing ourselves to dialogue among people of all persuasions, to discover common ground, to move forward, and to bring forth creativity resonant with and rooted in the common ground of Being, the implicate order at the root of our consciousness.

Yet setting a different course for dealing with our challenges requires courageous new ways of meeting these conditions. To Prigogine, the disturbance of an existing system’s equilibrium—its “system habit”—is the key to a systems realignment with its own deeper structure. As such, Prigogine saw that the intense process of dissipative self-organization breaks down outer structures, structures that themselves are outmoded and misaligned with the dynamic and natural order of things. The new emergent structure, if allowed sufficient freedom, would emerge more closely aligned with a natural order, and in greater communication with other “systems” (i.e., with other human beings and the natural world).

Of course, the implicate order is—as defined—not something visible, not something that can be anything more than implied. Seen as the order from which life arises, it must also be that which orients life toward greater beauty and harmony. As such, it might serve as the only valid reference point in a time of chaos. Such a time is one in which choices and actions have the most profound effects. The implicate order can also manifest as multiple reference points of physical, mental...
and relational harmony—as wuli, shili, and renli. Instead of creative activity that reflects adherence to narrow special interests, to dogmas of profit or political persuasion, such reference points give us the opportunity to meet the challenges of our age with choices that resonate with the common good and that enhance the world around us.

**APPLICATION AT THE INDIVIDUAL LEVEL**

The integration of the insights of Bohm and Prigogine yields a sense of a “dynamic reality” unfolding in a very creative way. It suggests that—through a great deal of experimentation and through the resourcefulness emerging from deeper structures of being—a supra-intelligent “self-organizing process” will occur. While this process inherently invokes a positive vision of possibility, the integration emphasizes that such dynamic unfolding requires an alignment of the integral parts of this process. Taking this into the realm of our present challenges, it is very clear that such an alignment must involve a resonant and orchestrated movement of a great many resources and human beings.

The scholar Herbert Guenther, whose research on Tibetan tantric teachings on wholeness yielded a profound synthesis of the work of Prigogine, Bohm, and others, describes how dynamic unfolding takes place within the human being (Guenther, 1984). Like Bohm, Gunther emphasizes that the process has to do with human creativity, and with a transformational process akin to alchemy. Guenther notes:

> In this underlying creativity of ours, which is like a golden plate, we have to coax its god-structure, which is like molten quicksilver, so as to cultivate imaginally this (whole process) into becoming the articulated presence of Being’s (divine) dynamics. (Guenther, 1984, p. 129)

Here Guenther brings into focus the power of a certain type of creative imagination that is active and yet has to be “coaxed.” In Prigogine’s language, it can emerge only when an outmoded “system habit” has been somehow dissolved. As Bohm would emphasize, the action must take place first at the mental level: An intense process of “melting” rigid structures that fragment thinking allows creative vision/imagination to bring forth its potential, not the least of which is a profound capacity to shine light on heretofore unseen possibilities in life situations.

David Michael Levin (2008) has explored some of the ways that Western phenomenological philosophers and poets have accented this opening of vision as alluded to here. Exploring works of Nietzsche, Goethe, Heidegger, Merleau-Ponty, and others, Levin described how “unlearning” permits a transcendence beyond nihilistic, postmodern forms of deconstruction toward the creative intelligence and vision emphasized by Bohm and Prigogine. The emergent view is that life is imbued with a great richness of potential and possibilities, but that to be able to actualize these, there is a need for the individual’s unique contribution. This demands the cultivation of an inherent capacity for “a vision of the heart”
THE VISION OF POSSIBILITY AND THE CHALLENGE

(i.e., an openness, curiosity, and active shining of a light of intuitive awareness on circumstances and conditions).

FROM SELF-CULTIVATION TO A VISION OF POSSIBILITY

Today with society we often find a nihilism that parallels but only partially adopts the hermeneutics of deconstruction found within postmodernism. This nihilism questions the idea of an inherent meaningfulness within life. It may be expressed in an exhortation to “pattern one’s world” in order to have meaning, or to simply take a path of least resistance to shallow consumerism and social media. When such nihilism becomes a backdrop for discourse on issues related to the environment, it supports a view that Nature has no inherent meaning that has to be preserved, that we need not refer to the natural world as something sacred, as a reference point in our decisions about such issues as energy, food production, health, and quality of life. Such perspectives fail to recognize a certain “opening of vision” that postmodernism brought forth, and also fail to consider the scientific insights that the work of Prigogine and Bohm, cited above, provide.

One such perspective is found in Steven Vogel’s book *Thinking Like a Mall* (2015). Vogel suggests that we drop our notions of “nature” and replace them with a view of an “environment”—an environment that we shape and mold to create the world that we want. Central to this outlook is the belief that distinguishing between natural and fabricated, man-made environments limits our freedom and possibilities for building such a world. In Vogel’s thought, since we have reached the “end of nature” and everything around us has already been touched and influenced by humans, it is both useless and fruitless to limit ourselves by referring to “what is natural” to guide our constructions of shared domains of life. Central to this approach is the removal of any reverence for the natural world as sacred. Vogel (2015) notes:

>... an environmental philosophy after the end of nature is one that rejects religion, rejects the idea that some spaces are sacred and others are profane or have been profaned by human action. We are not profane, or rather there is nothing to the distinction between the profane and the sacred, which is to say there is nothing sacred [author's italics]. The greatest advantage of such a philosophy is that it gives up the idea that there is something beyond us or above us to whose dictates we must submit unquestionably, whether that something be God, or Nature (or nature), or the market. (p. 218)

A parallel perspective is found in the book *The Path*, by Puett and Gross-Loh (2016). Through their interpretations of essential teachings of Chinese philosophy on how people achieve “the good life,” the authors suggest that reverence for nature is somewhat arbitrary, romanticized, and limiting. They suggest that the pursuit of any inherent meaning within life, via ways of reflection, meditation, or retreat in nature, is fruitless. Their logic is based on the assumption that there is no essential, deeper “self” to find through such practices, and therefore it is up to human beings to give structure and meaning to life as best they can. An
enlightened self-interest—without any reference to a “Way” that is rooted in an inner encounter with something truly natural, harmonious, or beautiful—is seen by Puett and Gross-Loh to lead toward “the good life.”

Central to Puett and Gross-Loh’s observations is a critique of attempts at reflective self-awareness that seek to discover a “true self” that is in accord with “nature.” They give examples of how people feel that certain behaviors and actions would not be natural and thus in accord with this true self—such as the common reactions to hospital versus “natural” childbirth or reactions to genetically modified foods.

Such views about reflection discount many references and exhortations to inner reflection within Chinese philosophy since antiquity. As Mary Evelyn Tucker (Ekken, 2012) has noted through her extensive investigations of Chinese thought, such explorations are found within both Confucian and Neo-Confucian thinking. While often influenced by Taoism and Buddhism, reflection stands by itself at the very core of Chinese thought. Moreover, the assumption that one could conclude that the only result of reflection would be the confirmation of the “non-existence of a self” fails to consider that there may be some discovery awaiting the explorer who encounters non-being, that is, that something exists—or at least some shift in perception ensures—by moving to the far side of “non-being.” As expressed in the contemplative traditions of the world, the experience of non-being is the beginning of “true perception.” In the words of the Sufi poet Rumi, it is “the clear bead at the center than changes everything (Barks, 2003, p. 30).

A good example of the fruits of this “opening of vision” is found in the work of the Neo-Confucian Zhang Zai who perceives that the apparent world is the manifestation of Qi, pure life energy, which comes from somewhere. As Tucker notes, Zhang Zai does not see non-being as a void into which phenomena disappear and are annihilated. Rather, he sees it in more positive terms not only as the source not only of life but also of generation and transformation … [in which] material force transforms through fusion and intermingling (Ekken, 2012, p. 16).

Tucker explains how Zhang Zai (and, most likely, other Confucians and Neo-Confucians) consciously contemplated two dimensions: a “Great Vacuity” and a “Great Harmony.” The Great Vacuity is the unmanifest, closely akin to what Bohm has called the implicate order, or “the unmanifested aspect of the creativity and fecundity of the universe” (Ekken, 2012, p. 16). The Great Harmony is the manifest natural world. In Zhang Zai’s thought these two worlds are not separate from each other.

In sum, while such works such as those of Vogel and of Puett and Gross-Loh are valuable for calling us to see that we have a great power to shape our lives and the world around us, their inability to recognize that Nature is a reference point—be it of primordial harmony or a fecund vacuity—seems very questionable. It stands in opposition to the experience of most indigenous people and of anyone who has spent considerable time in reflection within and on the natural world.

Quite akin to Zhang Zai’s discovery that “the Great Vacuity” is fertile, some notable postmodernists pointed toward the cultivation of a capacity of the human being that goes beyond self-cultivation: the cultivation of a capacity to “see” the world of harmony and possibility. Levin’s (1988) seminal work on the opening of
vision, explores this capacity within postmodernism and also highlights the use of reflection and contemplation as not necessarily for “self-discovery,” but rather to transform the ways that we holistically see and experience ourselves in relationship with our world. These methods reinforce Bohm and Prigogine’s appeal to us to seek and actually experience the implicate underlying order. However subtle the experience, it bears fruit in bringing us toward direct experience of our interdependence with all of life, and, most specifically and relevant at this time, with the effects of our thoughts on the ecosystem.

Levin notes the connection between the clarity of our vision and the pull of the materialistic components and concerns of our world. Drawing on Heidegger, Levin describes how meditation and reflection make possible what Heidegger called “Releasement,” a capacity of letting go of the grip that our usual ways of seeing and experience have on us:

Releasement (Gelassenheit) towards things and openness to the mystery belong together. They grant us the possibility of dwelling in the world in a profoundly different way. They promise us a new ground and foundation upon which we can stand and endure in a world of technology without being imperiled and brutalized by it. (Heidegger in Levin, 1988, p. 237)

In the Sufi contemplative tradition, there is a caution about living in a one-sided condition that separates the world of matter and spirit, of “immanence” and “transcendence.” There is an ancient Sufi saying about a certain guidance that life offers to the one who is open to experiencing the egalitarian, reciprocal and undifferentiated nature of “Reality”: “When I am lost in the Divine Immanence, [Reality] reveals Her Transcendence. When I am lost in the Divine Transcendence, She reveals Her Immanence” (Norton & Smith, 2008, p. 159).

From the Sufi perspective behind this saying, those lost in the outer world who see no relevance in the interior dimension are missing the state of consciousness behind appearances, the place of fecundity and the source of what will be, in the manifest world, “the pattern in jade.” While conversely—and addressing a concern that is found within both Western and Eastern philosophy, those who have left behind the everyday world for an exclusive pursuit of recollection/meditation make an equally serious error, and will continually be pulled toward the recognition of beauty and sacredness of the world as-it-is.

By way of summary, Nietzsche explains further the forbearance of “practices of the Self” that take us beyond our more common, reactive modes of experience, yet still allow us to integrate inner and outer experience via a deepened perception that yields a “noble culture”:

One has to learn to see, one has to learn to think, one has to learn to speak and write, the need in all three is a noble culture. Learning to see—habituating the eye to repose, to patience, to letting things come to it; learning to defer judgement, to investigate and comprehend the individual case in all its aspects. This is the first preliminary schooling in spirituality, not to react immediately to a stimulus, but to have the restraining, stock-taking instincts in one’s control. Learning to see, as I understand it, is also most of what is called in unphilosophical language “strong
“Willpower” the essence of it is precisely not to will, the ability to defer decision. (Nietzsche, as cited in Levin, 1988, p. 236)

Forbearance takes us outside of the cave of our subjective experience, allowing us to go beyond the grasping eyes and grasping mind (Tegchok, Carlier, & Chodron, 2012), opening us to seeing things differently. Such a practice is not used to attempt to extinguish desire but to utilize the energy and power of desire to take a form that is somehow an expression of LI, manifesting as physical, mental, and sociocultural harmony.

**SUMMARY: REFLECTIONS ON THE EVOLUTION OF SCIENCE AND THE WORLD OF THE ALL-POSSIBLE**

Hope and optimism . . . are not enough to get us where we need to go. To address our changing climate, we must foster a climate of social change. And that requires both an honest assessment of what we need and the boldness to reach for it, even if some people insist that it’s beyond our grasp. (Brune, 2016, p. 4)

Prigogine’s dynamic theories were based on the observation of harmony and beauty emerging from near-chaos conditions, when deep patterning structures would emerge. The emergence required that there was enough breaking down of superficial rigidities. Said another way, a primordial order of beauty, the Li, represented as a “pattern in the jade,” emerges and becomes an ordering principle—in the mental shili and relational renli just as it does in the physical wuli. With these observations behind him, and in the face of skepticism when sharing his views, Prigogine (1994) suggested that the complex and apparently destabilizing conditions of the world that we now face could lead to better conditions and even foster our evolution as a species. While Prigogine’s optimism seems most crucial at this time, he realized that the applications of his theories of physical systems were not so easily translated and applied at the level of social systems. David Bohm’s work seems crucial to realizing the necessary translation.

Bohm continually emphasized that human beings and human systems had to move beyond rigid structures and fragmented ways of thinking. In this regard, destabilized systems provide us with the opportunity of an open arena within which we have the freedom to move beyond familiar habits of thought in developing a sustainable future. Bohm suggested, again and again, that a kind of dialogue that was free from roles, hierarchy, and fragmented ways of thinking was crucial. Bohm asserted that those partaking in such dialogue would have to set aside their usual prejudices and self-serving perspectives to move to a level where real insight and creative intelligence could emerge.

The Sufi master Inayat Khan (1983) described the underlying reality of life—what Bohm would call the ‘implicate order’—as the “all-possible.” As Levin (2008), Heidegger (2000), and others assert, such a vision of “all-possibility”
emerges from a contact with the depths of being, and not merely from reactive responding to our world.

By tapping into subtler levels of being and finding the capacity for vision that comes from our depths, we align nature within and without. From this emerging capacity, the creative intelligence that is needed to address the challenges we face may emerge. As such, ways of deep reflection, all too easily devalued in a modern culture that is oriented toward efficiency and economic priorities, must again be recognized as crucial for cultivating the vision of possibility that we need.

NOTE
1. The essential elements of Bohm’s thinking here are found in Science, Order and Creativity (Bohm and Peat, 1989, pp. 229–271).

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