

The personal, social and environmental sustainability of Jainism in light of Maharishi Vedic Science

Lee Fergusson¹ · Geoffrey Wells¹ · David Kettle¹

Received: 30 October 2016 / Accepted: 20 April 2017 / Published online: 8 May 2017 © Springer Science+Business Media Dordrecht 2017

Abstract The Jain tradition of ecological awareness and sustainability has been well documented over the last 25 years, although its roots lie deep in Indian history, specifically in texts such as the Tattvārtha Sūtra and Ācārāņga Sūtra. This traditional body of knowledge includes a long-standing theory and practice of personal, social and environmental sustainability, addressing such views as the interconnectedness of humans and the laws of nature, the interdependence of everything in the universe, the responsibility of humans to conserve and preserve natural resources, the avoidance of wanton and unnecessary waste generation, and a general aversion to mistreating or abusing the environment. These views encapsulate the lifestyles of some ten million people, including both mendicants and laity. Similarly, Maharishi Vedic Science, the systematic exploration and practical application of the Veda and Vedic Literature as taught by Maharishi Mahesh Yogi, makes a compelling case for establishing the unity of human life with nature and for promoting actions which guarantee both the protection of nature and protection by it. The purpose of this paper is to examine the relationship between the principles of sustainability in Jainism and the corresponding viewpoint of Maharishi Vedic Science, including supporting scientific evidence of its application, and to posit their contribution to a sustainable world future.

Keywords Sustainability · Jainism · Maharishi Vedic Science · Principles · Research

1 Introduction

Twenty-six years ago under the auspices of the Institute of Jainology, the late L.M. Singhvi (1990, 2006), former High Commissioner of India to the UK, issued his "Jain Declaration on Nature". In it, Singhvi (2006) made some remarkable claims, including "the Jain tradition...enthroned the philosophy of ecological harmony and non-violence as its lodestar"

Lee Fergusson lee@maharishivedicresearch.org

¹ Maharishi Vedic Research Institute, Oxenford, QLD, Australia

(p. 217), "the ecological philosophy of Jainism, which flows from its spiritual quest, has always been central to its ethics, aesthetics, art, literature, economics and politics" (p. 217), and Jain philosophy maintains "that the greatest work of humanity could not match the smallest worder of nature" (p. 218).

Singhvi's declaration triggered two primary reactions, both of which have been enunciated and discussed widely during the past two and half decades. On the one hand, Western environmentalists, scholars and sustainability scientists were awakened to, and stimulated by, the rich vein of traditional Jain knowledge which dates back hundreds of years and which apparently speaks intimately about the environment, ecology and sustainability. (As a general point of orientation, we use the term "sustainability" to simply mean something—for example, a process, system or practice—that can be maintained or kept going without depleting itself or damaging its surroundings; however, we also recognise that the term has many meanings, and multiple types and levels of usage are possible in different contexts. We use the term "principle" to mean a foundational or fundamental "truth" or axiom.)

This view, encouraged by Singhvi's (2006, p. 219) statements on Jain cosmology and nature, recognises "the fundamental natural phenomenon of symbiosis or mutual dependence, which forms the basis of modern-day science of ecology" and maintains that "the ancient Jain scriptural aphorism *Parasparopragraho jivinam* (all life is bound together by mutual support and interdependence) is refreshingly contemporary in its premise and perspective. It defines the scope of modern ecology while extending it further to a more spacious 'home'".

Moreover, scholars have as a consequence also investigated some of the main scriptural sources of Jainism to better understand its position with respect to ecological thought. For example, Dundas (2006, p. 100) analysed the $\bar{A}c\bar{a}r\bar{a}nga~S\bar{u}tra$ as it pertains to the behaviour of bees (i.e., $M\bar{a}dhukary\bar{a}~vrty\bar{a}$) and Tatia (2006) analysed the writings of Jain philosopher Haribhadra and texts such as the *Tattvārtha Sūtra* and $\bar{A}c\bar{a}r\bar{a}nga~S\bar{u}tra$ (particularly because the latter concerns trees and plants). Tatia (2006, p. 14) concluded that many of these ancient sources "serve to remind the world of the power and complexity of nature as well as the moral advantage of living simply". As a result, a significant corpus of literature on Jain ecology and sustainability has emerged in the last 15 years (e.g., Chapple 2006a, 2006b; Jain 2011; Kumar and Narayan 2003; Tobias 2008).

On the other hand, some commentators argue that, while of academic (and possibly even practical) interest, no such link between Jainism and modern ecology can be made, and therefore referring to a Jain sustainability ethic being "refreshingly contemporary" may be misleading (e.g., Dundas 2006). Cort (2006, p. 65) points out that while there is evidence of a degree of environmental justice and even deep ecology in Jainism, a disjunction exists between "how nature and the environment have been portrayed in classical Jain literature" and modern sustainability principles; he questions the proposition (adopted by Singhvi and subsequently others) that "Jainism is an inherently environmental religious tradition". Dundas (2006, p. 111) also suggests that contemporary sustainability scientists and environmentalists have "co-opted" Indian traditions simply because they "appear consistent" with modern sensibilities, despite these traditions having "highly ambivalent presuppositions about nature and the world". Therefore, some commentators argue that "as of the early 2000s there is no Jain environmental ethic *per se*" and that statements which suggest "Jainism has always 'enthroned the philosophy of ecological harmony' are largely untrue as statements about history" (Cort 2006, p. 65).

Similarly, Chapple (2006a, p. 138) emphasises that while Jain philosophy may "approximate an environmentally friendly ideal", the primary Jain pursuit "focuses on personal, spiritual advancement, not on a holistic vision of interrelatedness of life", particularly when one considers the fact that Jainism's most fundamental precepts are only comprehensively practiced by a few hundred thousand mendicants rather than a wider laity which has had to make significant compromises in regard to finding its place in the modern environment. Moreover, the global nature of contemporary environmentalism and sustainability (including issues such as global warming and ozone depletion) and the currently held interconnected worldview of global ecology (i.e., related to the biosphere) are not topics to which traditional Jains would (or could) have turned their attention, preferring to more generally focus their attention on local or regional matters.

These contrary views about Jain ecology and its "declaration on nature" rest on an indisputable fact: disciplines such as "ecology" and "sustainability science" are relatively new epistemes (an argument also made by Vannucci [1999] in the context of Vedic knowledge and ecology, although first to use the word "episteme" in the context of knowledge "characteristic of a historical period" rather than "true" or "correct" intellectual knowledge was Foucault 1970) and therefore cannot relate directly to ancient knowledge. For example, the concept and practice of "environmentalism" has "arisen [according to Cort 2006, pp. 65–66] out of a set of physical, technological, and increasingly moral and intellectual challenges of the past several centuries, but has attained its position as a distinct field of inquiry—an episteme—only within the past several decades". Thus, questions raised by such disciplines are not issues Jains have, or could have historically, thought about or acted upon. In this sense, Cort (2006, p. 66) argues that "without the episteme of environmentalism, it is not possible to develop a conscious response in thought, speech and deed to the questions raised by that episteme", and therefore to "speak of 'Jain environmentalism' before the recent past is meaningless".

However, we conclude that while it may not be possible to directly or seamlessly associate traditional Jainism with contemporary sustainability science for the reasons given above, and while we do not wish to unnecessarily elevate the merits of one position over the other, enough data do exist to suggest it is not unreasonable to identify a tentative link between Jain philosophy and the contemporary understanding of sustainability science, particularly as it (i.e., Jainism) is practiced at the local or regional level by both mendicants and laity. This determination will inform the following overview of personal, social and environmental sustainability in Jainism, a position not unreasonable given the significant amount of research presented elsewhere which supports this view.

Maharishi Mahesh Yogi—founder of the Transcendental Meditation and TM-Sidhi programme and Maharishi Vedic University in Europe, Maharishi University of Management in the USA, and Maharishi Mahesh Yogi Vedic Vishwavidyalaya University in India—has, like representatives of the Jain tradition, similarly made declarations about nature, the environment and sustainability. These declarations have been made in the context of his Vedic Science and in the contexts of 40 aspects of the Veda and Vedic Literature, with particularly emphasis on the relation of Vedic Science to the growth of human consciousness. For example, in 1972 Maharishi (1973, p. 3) established seven goals for his worldwide activities (what he called his "World Plan") of which Goal #3 was "to maximise the intelligent use of the environment", and in 1978 he said that

concern for [the] environment is a legitimate worry in almost every country and among responsible people everywhere. Men have for too long treated nature and its resources as either enemies or slaves to be exploited at will and without regard to the after-effects. The all-pervasive imperatives of greed and desire to accumulate more and more wealth left no alternative other than to plunder nature. For a while, man even saw himself as the subduer of nature and treated nature's resources so ruthlessly that today he is faced with the collapse of society's political, social, economic, and environmental structures (World Government of the Age of Enlightenment 1978, p. 9).

Maharishi has even spoken about energy consumption and the risk of nuclear technology to the environment, pointing out that "man has...succeeded in devastating his environment in terms of flora and fauna, and entire lakes, rivers, and forests have become the dealers of disease rather than refreshment, health, and pleasure" (World Government of the Age of Enlightenment 1978, p. 9). As a consequence, Maharishi declared his message and method encourage the "oneness of human beings with nature and the environment—attunement with natural law" (World Government of the Age of Enlightenment 1978, p. 9). It is in this context, and against the background of this message and method, that the present paper will discuss Jainism and sustainability.

Preliminary research has been conducted on Maharishi Vedic Science and its relation to sustainability science. For example, Fagan (2011) has discussed renewable fertilisers, crop rotation and diversification, soil conservation and natural means of pest control in the context of genetically engineered horticulture and in light of Maharishi's Vedic agricultural methods, Scaroni-Fisher and Fisher (2011) have considered Vedic knowledge in the light of sustainable forestry and architecture, and Wallace (2011) has examined Vedic technologies in the context of organic agriculture. More recently, these authors have identified the foundational principles and practices of sustainability in Maharishi Vedic Science, as well as its relation to indigenous sustainability (Fergusson et al. 2017a, b).

Of interest also is the "spiritual quest" of Jains to obtain both "happiness and personal peace" (Bhaskar 2006, p. 173) and Maharishi's (1957, p. 3) desire to "root out [mankind's] suffering" and to secure personal and collective peace through Vedic Science; indeed, Maharishi (1966, p. 80) maintained from the beginning of his teaching in the late 1950s that the "expansion of happiness is the purpose of life" and removing "misery and peace-lessness" are central to his mission (1957, p. 3). Heaton (2016) has investigated the relationship of Maharishi Vedic Science to sustainable architecture, and many of the principles and applications of sustainability in the literature present a *prima facie* case for alignment with those enunciated in the literature on Jainism; however, any such linkages, should they exist, have yet to be explored. Moreover, Maharishi has described the tradition of Vedic wisdom as foundational with respect to world religions (Maharishi 1969, pp. 255–262).

We therefore conclude that a parallel set of sustainability principles may exist between Jainism and Maharishi Vedic Science but these have yet to be identified. For this reason, the present paper asks the following two research questions: (1) what are the principles of personal, social and environmental sustainability in Jainism; and (2) what are the principles of Maharishi Vedic Science which illuminate these fundamental Jain principles?

2 Sustainability in the Jain tradition

2.1 Overview

The 1500-year Jain tradition represents one of the most comprehensive and detailed investigations into the nature and continuous application of what can be called an "ethics of sustainability", and the benefits of adhering to its principles are today enjoyed by about 10 million people, most of whom are in India but also includes many in the Indian diaspora. At the core of Jain teaching is the principle of *Ahimsā* or non-violence. However, the application of Ahimsā is highly complex, and any attempt to superficially explain it in the context of sustainability will not succeed. Therefore, the following represents an attempt briefly to contextualise Jainism within the broader framework of what has been called "Jain ecology and sustainability" in order to answer research question 1.

An authoritative analysis of the relationship of Jainism to sustainability has been provided by Chapple (2006a) and can be summarised in the following way: we have to learn from nature. Kumar (2006) presents this central Jain principle through an example. Consider the honeybee: she goes from flower to flower taking only small amounts of nectar from each flower, but never takes away too much nectar from any one flower; bees then transform the nectar into a sweet resource with nutritious and healing properties. In contrast, Kumar observes, humans see something beautiful or useful in nature, and "take it and take it until it is depleted and exhausted; if we would learn from and follow the honeybee we would only take a little and be contented" (Kumar 2006, p. 181). Kumar expands this principle in terms of interdependence, using a dialogue with his mother as the vehicle for his explanation:

The honeybee does not know how to create waste! The bee not only teaches the way to transformation, but also the way to pollination. We do not find the fulfilment of our potential by ourselves; we depend on each other. Man depends on woman; I depend on you. I am grateful to you, my son, that you came into the world through me. You needed my body to be born; I needed you so that I could be a mother. We humans depend on the trees and rain and on the fruits of the earth. We need to work to enhance the relationship between us and all life. This is the essence of pollination. (Kumar 2006, p. 182)

For these reasons, Jains take their lead from the honeybee (*Madhukarāyate*, मधुकरायते) which "sucks honey in the blossoms of the tree without hurting the blossom and [thereby] strengthens itself", and maintain that human "wants should be reduced, desires curbed and consumption levels kept within reasonable limits. Using any resource beyond one's needs and misuse of any part of nature is considered a form of theft. Indeed the Jain faith goes one radical step further and declares unequivocally that waste and creating pollution are acts of violence" (Singhvi 2006, p. 224), and that because of the principle of interdependence violence to nature is tantamount to violence towards oneself.

These views are based on what Singhvi (2006) calls an "ethical philosophy of ecological harmony and non-violence" which he claims consists of five guiding principles: (1) *Ahimsā* (अहिंसा) or non-violence towards humans and all of nature; (2) *Parasparopragraho jīvanāma* (परस्परोपग्रहो जीवानाम्, *Tattvārtha Sūtra*, 5.21) or universal interdependence of all things in the universe; (3) *Anekāntavāda* (अनेकान्तवाद), the "doctrine of manifold aspects" which underpins the Jain concept of universal interdependence, and relates to the changing reality of an infinite number of multiple viewpoints and to the corollary that views of life must not be "one-sided"; (4) *Samyaktva* (सम्यक्त्व) or equanimity, and hence an opposition to intolerant, inflexible, harmful, aggressive and unilaterally dogmatic attitudes to the natural and human-made world and to those around us; and (5) *Jīva-daya* (जीव दया), which is underpinned by Ahimsā, represents the need for compassion, empathy, charity and universal friendliness. Collectively integrated, these five principles form what can be called the Jain "ethical code of conduct".

The code includes kindness to animals, vegetarianism (a topic in relation to sustainability considered in more detail by McLeod-Kilmurray [2011]), self-restraint, charity and the avoidance of waste. Underlying the Jain code is what Singhvi (2006, p. 223) refers to as the Mahāvratas (महाव्रतम् or big vows for mendicants) and Anuvratas (अनुवर्तम् or basic vows for laity). These are pledges, if you will, of how to live a non-violent life at the heart of which is the "emphatic assertion of individual responsibility towards one and all. Indeed, the entire universe is the forum of one's own conscience. The code is profoundly ecological in its secular thrust and [in] its practical consequences". As stated above, at the core of Jain ecology and environmental ethics is the philosophy of Ahimsā. Non-violence to a Jain means the obvious non-harm to fellow human beings, but extends to not harming animals (hence a strict vegetarianism), and involves non-harm to the gross as well as subtle levels of life, including "the very essential pre-requisites of life—to the air, water, earth and plants—for, according to Jain biology, all these serve as the abodes of countless souls" (Cort 2006, pp. 74–75). Such an approach springs from the view that "consciousness" is the "inalienable characteristic of every [soul], however undeveloped it may be. [Consciousness] is present even in the *nigodas* (the least developed life-form) and, through its progressive development, the *nigoda* too may culminate in the supreme state of the soul, namely omniscience" (Vallely 2006, p. 202).

Historical, as well as contemporary, examples of individuals living in accord with the Jain code abound and include Mahāvīra and Ādināth who famously urged their followers to: (1) limit consumption; (2) refrain from eating meat; (3) properly prepare fruit and vegetables (for example, by removing seeds from food containing multiple seeds, and retaining them for re-sowing and regeneration); (4) keep enough seed after sowing for oneself as well as leaving seed on the ground for wildlife (Kumar's mother put grain on top of anthills for this purpose); (5) not exploit animals; and (6) respect the "water body, the fire body, the earth body and the air body" [in Jain philosophy, these natural "bodies" are not distinct from human bodies; as human bodies contain each element, and because these natural bodies have sacrificed themselves "to sustain the human body...it is only right that human beings should take responsibility for sustaining the natural order and preserving the integrity of the elements" (Cort 2006, pp. 184–185)]. For this reason, Jains not only maintain that non-violence is the highest duty in life (Ahimsā paramo dharmah, आहंसा परमो धर्मः) but also aspire to the practice of "mutually supporting all living creatures", thus providing what Dundas (2006, p. 110) calls the "components of a morally unified ideological underpinning".

2.2 Personal sustainability

Jains have historically taken personal sustainability seriously, but there are distinctions of approach between mendicants and laity. In worldly activities, the Jain approach includes three factors, in addition to the five more general sustainability principles discussed above, namely: (1) choosing a legitimate means of livelihood (*Nyāyopatta-dhana*, न्यायपथ घन); (2) performing service (*Sevā*, सेना); and 3) offering gifts (Dāna, द्वान). According to Jaini (2006, pp. 143–144), legitimate forms of work include banking, trade, medicine, arts and crafts including textile manufacture, and government service; unacceptable forms of work, which involve significant degrees of *Himsā* (हिंसा or violence, injustice or cruelty), include the destruction of timber including clearing forests, work involving the use of or trade in animal by-products, such as ivory, bones or pelts, trade in destructive products, such as weapons or poisons, trade in alcohol, and work that involves draining lakes. Work that serves unnatural foods, such as bonemeal and animal by-products, to other animals (for example, Yam [2009, p. 89] points out that brain-destroying mad cow disease (*bovine spongiform encephalopathy*) "vividly illustrates why it's not a good idea to eat your own species") is

particularly frowned upon, but military service can be a last resort if required to protect one's own community or one's nation (Jaini 2006, p. 145).

Jains also maintain that spiritual benefit (*Punya*, पुण्य) can accrue from service and giving, particularly from "gift-giving with compassion". For example, Jains practice *Abhaya dāna* (अभय द्वान), i.e., giving protection to animals, providing food and medicine to animals, including birds, and actively lobby for the cessation of animal slaughter (*Amāri*, अमरी). Similarly, Jains have historically placed great importance on knowledge and education, and have gifted schools, scholarships and books to their communities; encouraging literacy for both men and women, publishing and writing, and performing service in temples are also advocated (Jaini 2006, p. 147). At the household level, frugality and non-wastefulness are favoured, and the ability to give food, particularly to mendicants of all faiths, is considered honourable, according to Jaini (2006, p. 148).

Moreover, as Jains have relocated from India to other parts of the world, modern-day Jains have begun to "enthusiastically and effortlessly embrace 'green' concerns, arguing that they resonate fully with the teachings of the Jain tradition" (Vallely 2006, p. 193). However, Jainism has its foundations in asceticism, renunciation and purification (particularly as a means to free oneself from the "shackles of karma" and thereby gain liberation, as taught by the 24 "great teachers" or *Tirthańkaras* [तीर्यद्रस] such as Mahāvīra and Ādināth, according to Chapple [2006, p. xi]), and the application of a personal sustainability ethic by mendicants is completely different to that of the laity (i.e., *Śrāvakas*, आवकस). For example, mendicants eschew killing all life forms, including microorganisms (after Mahāvīra, who noted that even lichen, seeds and sprouts "if narrowly inspected [are] imbued with life" [Chapple 2006, p. xv]), a practice which is difficult to follow for laity. According to Vallely (2006, p. 199), it is therefore the "highly attentive, observant, and mindful" approach to the practice of Ahimsā that mendicants are mostly focused on in their daily routine.

2.3 Social sustainability

Vallely (2006, p. 193) maintains that modern-day Jains, particularly those in the diaspora, have shifted their ethical orientation away from an "orthodox, liberation-centric ethos to a sociocentric 'ecological'" ethos, resulting in a "shift away from the ascetic ideal" towards an adapted social sustainability viewpoint more suited to their adopted cultural setting. An example of contemporary Jain social sustainability can be seen in the Jain community of London, which presented the "Jain Declaration on Nature" at Buckingham Palace in 1990 and as a consequence joined the World Wide Fund for Nature. The community also launched the Ahimsa Environmental Award, which recognises individuals, businesses and community groups who have actively worked on reducing harmful waste, are conscientious about their impact on the environment, and make use of sustainable and non-depleting resources (Jaini 2006, p. 149). Accordingly, soon thereafter in the early 1990s, the same Jain community presented a "Statement on Ecology and Faith", and the Jain Vishva Bharati Institute in Rajasthan began offering programmes in ecology and environmental science. Together, these efforts represent a shift towards greater community engagement in social causes.

Cort (2006, p. 78) also reports that modern-day Jains are active in two streams of social sustainability: environmental justice and social ecology, mostly practiced in the northern parts of India; and what he calls "southern environmentalism", mostly practiced in the developing south. Both streams are dedicated to reducing environmental degradation as it affects the landless poor, women and (what Cort somewhat crudely calls) "tribals", and

both seek to identify and address not only environmental crises but also "issues of inequality and injustice in the control and distribution of resources". In these communities, sustainability is more a question of survival than a question of enhancing the quality of life; as Cort (2006, p. 78) notes, toxic waste dumps are "disproportionately located among communities of racial and ethnic minorities, as well as others who are economically and politically dispossessed" and therefore environmental social justice, as practiced by modern-day Jains, seeks to redress this trend.

2.4 Environmental sustainability

The Jain ethical code of kindness to animals, vegetarianism, self-restraint, charity and avoidance of waste speaks directly to the question of environmental sustainability. The specific principles underpinning this approach to the environment, which are broadly aligned with modern principles of sustainability, can be summarised (according to Tatia 2006) in the following seven maxims (although maxims 2, 3 and 7 also relate to personal and social sustainability in Jainism): (1) do not kill or allow others to be killed, try to protect life, display compassion to all living things, and do not get entangled in the misery and suffering of others; (2) resist injustice, favour truth (Satya, सत्य), and always speak the truth (from the Agni Purāna, 371.8, which says we should speak the truth, but speak it "sweetly", i.e., in a way that does not harm the listener, Satyam brūyāt priyam brūyāt, सत्यं ब्र्यात्प्रियं ब्र्यात); (3) resolve conflicts peacefully; (4) do not make the accumulation of wealth the main aim in one's life (Jain's particularly eschew human frailties such as greed, pride, conceit, excessiveness, rapacious desires and deceit); (5) pollution, extinction of species, and the destruction of forests and wildlife are crimes against the earth and against humanity; (6) pollution of the environment is caused by pollution within ourselves, and therefore each person "needs to remake himself or herself in the image of the divine ideal" (Tatia 2006, p. 5); and (7) to have a clean, sustainable environment "we have to adopt a lifestyle that springs from a moral and spiritual dimension" (Tatia 2006, p. 14). According to Jaini (2006, pp. 150–151), to these ends modern-day Jain communities throughout the world have participated in a host of environmental sustainability projects, including large-scale reforestation and wasteland development projects and the establishment of plant nurseries and animal shelters in India.

In summary, we conclude that several sustainability themes can be identified in the Jain tradition, including themes that suggest humans are interconnected to the laws of nature in fundamentally important ways and that everything in the universe is viewed as interdependent, that Jains recognise humans are responsible for conserving and preserving the resources of their environment, that wanton and unnecessary waste generation should be avoided, and that the environment should not be mistreated or abused. In Table 1, we have articulated ten main principles of sustainability identified from the above introduction to Jainism and paralleled these principles with their corresponding sustainability principle from Maharishi Vedic Science.

3 Overview of Maharishi Vedic Science

Maharishi Vedic Science is the theoretical and experiential investigation of the Veda and Vedic Literature as brought to light systematically by the great modern scholar and teacher Maharishi Mahesh Yogi. In addition to the four primary Vedas (*Rik Veda*, *Sāma Veda*,

Yajur Veda and *Atharva Veda*), Maharishi Vedic Science also recognises the importance of 36 other aspects of Vedic Literature, including the *Upaveda*, *Vedānga*, *Upānga*, *Brāhmaņa*, *ĀyurVeda* and *Prātishākya*. These 40 aspects of the Veda and Vedic Literature have collectively been explained in detail by Maharishi (1995), and he has developed systems and programmes to practically apply this knowledge to all areas of life. As Chandler (2011, p. 401) has noted, the designation "Maharishi Vedic Science" indicates "both the ancient traditional origins of this body of knowledge and the modern commitment to experience, system, testability, and the demand for that knowledge to be useful in improving the quality of human life".

It should be noted that in this fundamental sense, being an integrative science, Maharishi Vedic Science is different to Jainism in that it is a world religion (Gottlieb 2006). However, because Jainism is associated with, and has its roots in, the Vedic tradition and because both have a decidedly unique and soteriological view of the environment and the future, many similarities in outlook can be detected—including for example an interest in *Karma, Moksha* and the *Mahabhutas*—as will be shown in the following analysis. Indeed, Maharishi (1998, pp. 269–271) has called Mahāvīra and Ādināth "great luminaries of India…who maintained the eternal light of Veda, the tradition of pure knowledge, throughout the ages" and therefore parallel viewpoints are evident in both domains.

Moreover, one of the central experiential aspects of Maharishi Vedic Science—Maharishi's Transcendental Meditation and TM-Sidhi programme—has been thoroughly documented and researched over the last 50 years (e.g., Dillbeck 2011). Furthermore, this programme has been examined in light of most of the modern disciplines, for example empirically in health and healthcare utilisation (e.g., Herron 2005), physiology (e.g., Wallace 1970), and sociology (Davies and Alexander 2005), and more conceptually in art and art education (Beaufort 2011; Fergusson and Bonshek 2015), psychology and psychiatry (e.g., Alexander et al. 1991), management and economics (e.g., Schmidt-Wilk et al. 1997), education and learning (e.g., Fergusson and Bonshek 2013; Grant and Jones 1997), mathematics (Gorini 1997) and computer science (Guthrie 1997). The significance of the theory and application of Maharishi Vedic Science has also been defined and explained in detail elsewhere (e.g., Chandler 2011; Dillbeck and Dillbeck 1997; Nader 1993, 2012). It is therefore not the purpose, or within the scope, of this paper to fully investigate Maharishi Vedic Science; however, a brief introduction will help orient the reader to the present topic.

Maharishi Vedic Science declares that underlying and permeating physical existence is a unified field of pure consciousness (Maharishi 1986). Pure consciousness is understood by Maharishi to be the non-changing, absolute source of all the laws of nature that give rise to material creation. Existing beyond space and time as a silent, unbounded, unmanifest field of infinite creative intelligence, pure consciousness is said to create the physical universe, with all its diverse phenomena and properties, simply by referring to itself, by interacting with itself. This state of consciousness, Maharishi has said,

is completely self-sufficient. How it emerges from within its own self-referral performance, which is going on eternally at the unmanifest basis of all creation, is Vedic Science. How this happens, how the creation comes out—how consciousness becomes matter and how matter in nature behaves with utmost orderliness, absolutely following the laws of nature—this is Vedic Science. (Maharishi 1986, p. 26)

Maharishi (1986) has therefore referred to pure consciousness, which is transcendental in nature and beyond the realm of the senses and of space and time, as "nature's government" (p. 88), the "full potential of Natural Law" (p. 31), and the home of complete knowledge or "pure knowledge and the infinite organising power that is inherent in the structure

of pure knowledge" (p. 26); at this level of nature's operation, nothing but consciousness exists, nothing but pure knowledge (i.e., the Veda) exists, and therefore is "that level of silence which no one can pollute" (Maharishi 1986, p. 88). This view of both the unmanifest level of pure consciousness and its expression as the laws of nature and ultimately the physical universe is largely consistent with the view of creation proposed by quantum physics, particularly in relation to supersymmetric unified field theories such as those advanced by contemporary physicists like Hagelin (1987a, 1987b) and others.

However, Maharishi's fundamental purpose is not simply a theoretical one: he has articulated and provided a means whereby pure consciousness can be directly experienced and as if "awakened" or brought to light in order to culture human existence. Hence, a second important postulate of Maharishi Vedic Science states that pure consciousness can be directly experienced on the level of human awareness through the Transcendental Meditation programme and can be enlivened and promoted through the TM-Sidhi programme (Maharishi European Research University 1984). According to this view, the functioning of pure consciousness is the functioning of "Natural Law" in its most settled and silent state; thus, the conscious human mind, by identifying itself with this level of nature's functioning, can gain the ability to operate in a manner which is consistent with how "nature" itself functions at its most fundamental level. In so doing, individual life can increasingly reflect the infinite intelligence, energy and creativity of nature. This training, Maharishi explains, leads to the development of higher states of consciousness, or life lived completely in accord with the total potential of Natural Law, supported by all the laws of nature. In this way, being an infinite reservoir of intelligence, energy and creativity, pure consciousness can be harnessed for wholly positive application in daily life. According to Maharishi, if the human mind is "completely identified in transcendental [pure] consciousness with the full potential of natural law, the human mind is a field of all possibilities. This is how human life will be cultured through Vedic Science" (Maharishi 1986, p. 31).

Maharishi's prediction has been comprehensively verified by the 50-year scientific research programme outlined above. Thus, the Transcendental Meditation and TM-Sidhi programme develops the ability to spontaneously think and act in accord with all the laws of nature, and to utilise the intelligence and orderliness with which nature itself operates (Maharishi 1986, pp. 24–49). As evidenced by a substantial and growing body of research, this development has been found to not only contribute significantly to individual progress and fulfilment, but to the progress and well-being of society as a whole, including to its economic stability and quality of social life. Maharishi Vedic Science—because it fully satisfies and even extends a coherent theory of consciousness, because it applies experimental methods and research to test its propositions, because it uses its technologies to benefit every area of human life, and because it proposes contributing to the creation of an alternative future—is rightly regarded as a science of "complete knowledge" (Maharishi 1986). In that sense, we suggest it contributes to a comprehensive underpinning of sustainability science.

4 Sustainability in Jainism and Maharishi Vedic Science

To answer question 2, in Table 1 we present a preliminary alignment of the ten principles of sustainability identified in the literature on Jainism and ecology (left-hand column) with the corresponding principle identified in Maharishi Vedic Science (centre column); in order to validate the application of the principles of Maharishi Vedic Science, the

Table 1 Principles of sustainability in Jainism and Maha ence	rishi Vedic Science, and research findings associated with	the principles as a result of applying Maharishi Vedic Sci-
Jain Sustainability	Sustainability in Maharishi Vedic Science	Research Findings
 Non-violence towards humans and all of nature is fundamental 	1. All action should be harmless	 Greater inner locus of control; decreased aggres- siveness, hostility and tendency to dominate; greater orientation towards positive values; increased harmony in the work place
2. Everything in the universe is interconnected and interdependent	2. Everything in the universe is interconnected and interdependent	 Increased field independence, indicating broader comprehension and increased ability to focus attention; increased cognitive flexibility; and improved ability to deal with the abstract and complex
 Each individual is ultimately responsible for taking care of themselves and the world around them; if we want a sustainable outcome, we must take personal responsibility for creating it 	 Each individual is ultimately responsible for taking care of themselves and the world around them; if we want a sustainable outcome, we must take personal responsibility for creating it 	Changing trends in society by changing individual consciousness; developing the individual in order to strengthen society; and strengthening the relationship between individual and government
 Jains should maintain equanimity and oppose intoler- ant, inflexible, harmful, aggressive and unilaterally dogmatic attitudes to the natural and human-made world and to those around them 	 As a result of Transcendental Meditation, equanimity and tolerance are developed, and harmful and aggres- sive thoughts and behaviour are reduced 	4. Increased ability to see the opposites of life as mean- ingfully related; increased tolerance, generosity and appreciation; growth of a more sympathetic, helpful and caring nature; greater empathy; increased sensitiv- ity to the feelings of others; increased ability to be objective, fair-minded and reasonable
 Jains should engage in work which does not contra- dict their code of ethics, but particularly should not engage in work which involves violence to others or nature, including violence to animals 	 Only work which does not violate the laws of nature should be performed; "wealth of good quality" is money that has been earned by means which have helped to elevate society or to improve the lives of people 	 Increased enthusiasm for work; improved relationships at work and improved personal relationships; increased productivity; greater ability to achieve more with less effort
 Jains should develop and display compassion, empa- thy, charity and universal friendliness 	6. The Transcendental Meditation TM-Sidhi programme develops tolerance and thinking, speech and behaviour which are in harmony with the surroundings, and thereby the surroundings come into harmony with the individual; as a result, ill-feeling and disharmony are reduced, and compassion and universal friendliness are increased	6. Increased friendliness; increased good-naturedness, friendliness and loyalty; increased consideration for others; increased sensitivity to the feelings of others; growth of a more tactful, forgiving and agreeable nature; greater regard for etiquette; increased respect- fulness

Table 1 (continued)		
Jain Sustainability	Sustainability in Maharishi Vedic Science	Research Findings
7. Pollution, extinction of species and destruction of forests and wildlife are crimes against the earth and against humanity	7. Misusing or destroying the environment deal a fatal blow to ourselves and to our surroundings	7. More effective interaction with the environment and improved resistance to stress
8. Pollution of the environment is caused by the pollu- tion within ourselves, and therefore each person needs to remake himself or herself in the image of the divine ideal	8. All problems in society and the environment are prob- lems created by human stress and mental weakness; to correct these problems, we must align our thoughts, speech and action to the intelligence of nature	8. Biochemical indication of reduced stress; improved stress reactivity, including lower beta-adrenergic recep- tor sensitivity, lower blood pressure reactivity to stress, more normal resting blood pressure, lower resting epinephrine levels
 In order to have a clean, sustainable environment we have to adopt a lifestyle that springs from a moral and spiritual dimension of life; vegetarianism is at the heart of Jainism 	9. In order to have a clean, sustainable environment we have to adopt a lifestyle aligned to Natural Law	9. Decreased need for anti-depressants; decreased use of cigarettes, alcohol and non-prescribed drugs; increased intrinsic unifying ability, directedness and spirituality; increased moral reasoning; increased moral maturity
10. Jains should aim, where possible, to avoid generat- ing excessive waste and developing rapacious desires; a low-consumption, moderate lifestyle is preferred	10. Inner peace and freedom result when individuals avoid excess in all things; "moderation" in lifestyle occurs naturally in life lived in higher states of con- sciousness	10. More balanced mood; increased emotional stability; increased autonomic stability

right-hand column provides descriptors of findings from published research which have tested the Vedic principle. [Note: For the purposes of brevity, research findings in the text of this section, which correspond to the descriptors in the right-hand column of Table 1, are presented in two ways: first, a primary example of the descriptor is presented from the original literature where applicable; and second, findings referenced in the collected papers of Orme-Johnson and Farrow (1977) (volume 1), Chalmers et al. (1989a) (volume 2), (1989b) (volume 3), (1989c) (volume 4), Wallace et al. (1990) (volume 5); and Dillbeck (2011) (volume 6). The research finding, when listed as a citation and paper number in the collected papers, is given, for example, as: 1:65 = Orme-Johnson and Farrow 1977, which is volume 1, paper 65.] Some of Maharishi's principles in the centre column relate directly to "sustainability" while some are more general and may apply to several areas of life, including creating an alternative future.

Sustainability Principle 1 The principle of non-violence towards humans and nature is fundamental to Jainism and is not simply its view of how mankind should treat the environment. Maharishi similarly states that all "action should be harmless" (Maharishi 1966, p. 161), and in fact he references Ahimsā specifically as a central part of the five Yamas [i.e., including Satya (truthfulness, सत्य), Asteya (non-covetousness, अस्तेय), Brahmacharya (celibacy, ब्रह्मचर्य), and Aparigraha (non-acceptance of others' possessions, i.e., not stealing), अपरियह] of Patānjali's Ashtanga Yoga, one of the 40 aspects of the Veda and Vedic Literature (Maharishi 1969, p. 362). Consistent with the principles of Vedic sustainability, he goes on to explain that

...the only way to perform action without harming anyone is to raise the level of intelligence and consciousness to absolute divine consciousness. And when the doer is established on the level of Cosmic Consciousness, the undertaking will naturally be harmless to him and to the entire creation. All the activity will be in accordance with the upgoing stream of evolution, which alone could be a means to institute harmless action in the true sense of the word. (Maharishi 2011, 'The Art of Performing Action Without Harming Anyone', paras. 4-5)

Maharishi maintains that when aligned to Natural Law, the actions of a person who practices the Transcendental Meditation and TM-Sidhi programme "are totally harmless and life-supporting and he automatically gains the support of nature for all his endeavours" (World Government of the Age of Enlightenment 1978, p. 9). The practice of the Transcendental Meditation and TM-Sidhi programme serves a dual purpose. On the one hand, it allows the conscious thinking mind to align itself with the unbounded intelligence of pure consciousness, align itself with Natural Law, and thereby unlock the infinite potential of consciousness, while, on the other hand, it "normalises" the nervous system by removing stress from the physiology which is hindering the full mental and physical potential of the individual (Maharishi 1966) resulting in behaviour that reflects the harmony, orderliness and peacefulness of Natural Law. Such outcomes have been confirmed by empirical research, which indicate that individuals who practice of the Transcendental Meditation and TM-Sidhi programme display decreased aggressiveness (Ramirez 1975; 1:65, 1:73, 1:74, 1:77, 2:147, 3:284, 3:290, 4:308), hostility (Abrams and Siegel 1978; 2:142, 2:143, 2:158, 2:160, 3:280, 4:314) and tendency to dominate (Geisler 1978; 1:65, 1:77, 3:268, 3:290), a greater inner locus of control (Aron and Aron 1982; 1:69), a greater orientation towards positive values (5:394), and increased harmony in the work place and in personal life (5:399).

Sustainability Principle 2 The concept that everything in the universe is interconnected and interdependent is common to both traditions. For example, Maharishi states that "pure consciousness is a field of infinite correlation pervading the whole of nature, so any negative or positive impulse at any single point is instantly transmitted to the entire field and accordingly [that impulse] damages or enriches all life everywhere....The relationship between man and nature is indivisible" (World Government of the Age of Enlightenment 1978, p. 9). Maharishi also points out that "all the laws of nature are so intimately connected that the isolation of any one law will create imbalance in any field of life...if the part is not connected to the whole, then pollution is inevitable" (Maharishi 1994, pp. 297–299). Thus, Singhvi's (2006, p. 219) statement that "the fundamental natural phenomenon of symbiosis or mutual dependence, which forms the basis of modern-day science of ecology", is not only supported by "the ancient Jain scriptural aphorism *Parasparopragraho jivinam* (all life is bound together by mutual support and interdependence)" but is reiterated in Maharishi Vedic Science.

While it is impossible to confirm if this worldview of life is correct, it is possible to determine whether consciousness changes in a manner consistent with the principle. Results of practicing the Transcendental Meditation and TM-Sidhi programme do suggest that cognitive flexibility spontaneously increases (3:253, 4:300, 5:380) leading to a greater awareness of the entire "domain of stimulus" (i.e., the "field" in modern psychology) while simultaneously being able to identify the isolated but interrelated parts of the field (i.e., a cognitive trait called "field independence"; Fergusson 1992; 1:51, 1:52, 1:103, 3:255, 3:257, 3:259, 4:307, 5:384, 5:389, 6:476) and to an improved ability to deal simultaneously with the abstract and the complex (1:62). Such findings may indicate a greater awareness of interconnection between parts of the field and the whole of the field, and of the intimate relationship that exists between them.

Sustainability Principle 3 The concept that each individual is ultimately responsible for taking care of themselves and the world around them is a fundamental and common theme of both traditions. This view of life extends to include the contemporary recognition that if humans want a sustainable future, every individual must take personal responsibility for creating it (e.g., Middlemiss 2010). Maharishi (1957, p. 16) has emphatically stated that "if society is to become great, every man has to become great" and that "The whole universe is influenced by every thought, word, and action of the individual". Maharishi explains this relationship by saying: "Just as a stone thrown into a pond produces waves that reach all extremities of the pond, any thought, word or action produces waves in the atmosphere, and these waves travel in all directions and strike against everything in the atmosphere. They produce some influence in every level of creation" (Maharishi 2011, 'Importance of a Proper Thought', para. 1).

Indeed, the concept that each individual must take personal responsibility for the future is central to his teaching (Maharishi 1978). Maharishi (1966, p. 98) has in fact pointed out that it is precisely because of Sustainability Principle 2 that this phenomena is true when he said

"If you want the surroundings to be of best use to you, be of best use to your surroundings....If you cultivate within yourself a natural state of kindness, compassion, love, and forgiveness, you will receive a thousandfold reward from the surroundings. In order to make full use of the surroundings it is necessary to develop these qualities within yourself to the fullest capacity; these are merely the potentialities that are within you. If one is able to rise to this full value of human life, one may receive the maximum possible and make full use of the surroundings to his own best advantage" (Maharishi 2011, 'How to Make Full Use of the Surroundings', para. 26).

Such an outcome can be observed in research that indicates trends in society can be changed by changing individual consciousness (Alexander 1992; 1:98, 4:317, 4:318, 4:319, 4:320, 4:322, 5:402, 5:404, 5:405, 5:406, 5:407, 6:521, 6:524) and that strengthening the individual can strengthen government (King 1987).

Sustainability Principle 4 Jains seek to maintain equanimity and oppose intolerant, inflexible, harmful, aggressive and unilaterally dogmatic attitudes, applying these personality traits to not only other humans but also to the natural and human-made world. Maharishi supports these views but also emphasises the importance of applying actual technologies which change the consciousness (and thereby the mind and behaviour) of individuals, and as a result develop these qualities naturally and effortlessly. His efforts over many decades extend to programmes which incorporate these technologies into health care (e.g., Maharishi 1977), education (e.g., Maharishi 1978), defence (e.g., Maharishi 1986), jurisprudence (e.g., Maharishi International College for the Age of Enlightenment 1977), industry (Swanson and Oates 1989) and government (King 1987). Maharishi has pointed out specifically that as stress is reduced in the nervous system as a result of practicing Transcendental Meditation, both equanimity and tolerance are developed, and harmful and aggressive thoughts and behaviour are reduced. For example, in the context of Vedic Literature Maharishi (1969, p. 81) states "the universe is conquered by those whose mind is established in equanimity" (a concept that Maharishi locates at the heart of the Bhagavad- $G\bar{\iota}t\bar{a}$, which declares: "Having gained equanimity in pleasure and pain, in gain and loss, in victory and defeat, then come out and fight. Thus you will not incur sin", *Ihaiva tair jitah* sargo yeshām sāmye sthitam manah, इहैव तैर्जितः सर्गो येषां साम्ये स्थितं मनः, Bhagavad-Gītā, 5.19).

Results of individuals who practice Transcendental Meditation indicate increased ability to see the opposites of life as meaningfully related (1:76), increased tolerance, generosity and appreciation (Geisler 1978; 1:62, 1:65, 2:153, 2:164, 3:266, 3:290, 4:308, 4:316), growth of a more sympathetic, helpful and caring nature (1:73, 2:153, 4:316), greater empathy (2:149), increased sensitivity to the feelings of others (1:73, 4:304, 4:316), and an increased ability to be objective, fair-minded and reasonable (4:316), phenomena which are all associated with higher levels of electroencephalogic (EEG) brainwave coherence (4:297).

Sustainability Principle 5 Jains maintain that one should only engage in work which does not contradict their code of ethics, but particularly should not engage in work which involves violence to others or nature, including violence to animals. Unlike Jains, Maharishi does not specify the type of work people should engage in (although he clearly would not advocate work which is counter to, say, his view that "action should be harmless" and hence the manufacture of weapons or poisons, for example, would not be encouraged), but he does make it clear only work which does not violate the laws of nature should be performed; in other words, work which does not harm others or the environment. He also states that "the quality of wealth" that a person gains through work is important and

suggests that such "quality of wealth" is determined by the means through which it has been earned, as well as by the effects if produces for others. "A good quality of wealth is that which is earned through means which have helped to elevate the society and improve the life of the people" (Maharishi 2011, 'The Universe Reacts to Individual Action', para. 12).

While not specifically conducted on the type or outcomes of different types of work, research over many years does indicate that individuals who practice the Transcendental Meditation programme have an increased enthusiasm for work (2:150), enjoy improved relationships at work and improved personal relationships (5:399), display elevated levels of productivity (Frew 1974; 1:97, 5:399), and a greater ability to achieve more with less effort (2:164), perhaps indicating that as a result work is both more rewarding and less tiring and thereby contributes more to society. Certainly, that is the opinion of some organisational researchers and theorists (e.g., Herron and Graff 2011).

Sustainability Principle 6 Jains place a great degree of emphasis on developing and displaying compassion, empathy, charity and universal friendliness in all modes of human behaviour and interaction. Maharishi operationalises this principle by explaining that "... by the practice of Transcendental Meditation the individual becomes harmonious with the surroundings, or the surroundings become harmonious with the individual" (Maharishi 2011, 'Favourable Surroundings', para. 6); "if tolerance is not there", Maharishi explains, "ill-feelings and disharmony result" (Maharishi 2011, 'Art of Behaviour', para. 8).

"Other attempts to maintain harmony in the surroundings", Maharishi goes on to point out, "are not as effective as this practice. Good behaviour towards others, kindness, compassion and helpfulness all have their value, and on the surface of behaviour, one has to be guided by these high principles of life. One has to be helpful to his neighbour, kind to his friends, and compassionate to his surroundings; but all this kindness and compassion and help to others will be more fruitful and valuable if the inner life of the individual is pure" (Maharishi 2011, 'Favourable Surroundings', para. 7).

Indeed, research has shown that through the application of Maharishi Vedic Science, individuals display increased levels of friendliness (Geisler 1978; 1:65, 1:73, 1:77, 3:290), good-naturedness and loyalty (1:73), increased consideration for others (1:71, 1:73, 2:153) and a sensitivity to the feelings of others (1:73, 4:304, 4:316), growth of a more tactful, forgiving and agreeable nature (1:73, 2:153), and increased respectfulness to their surroundings (1:65, 1:77, 2:164, 3:277, 3:290).

Sustainability Principle 7 The Jain code of ethics suggests humans should avoid polluting the environment, should not contribute to the extinction of species, and should not destroy forests and wildlife [forests have been identified as particularly important in the Jain code (e.g., Shilapi 2006, pp. 161–162)], and that any contrary actions to these are crimes against the earth and against humanity. Maharishi similarly states that "to misuse or destroy the environment is to deal a fatal blow to ourselves because we are indivisible from our surroundings" (World Government of the Age of Enlightenment 1978, p. 9).

Specifically, Maharishi (World Government of the Age of Enlightenment 1978, p. 9) has identified activities associated with "energy and other vital natural resources such as various metals" which have "succeeded in devastating [the] environment in terms of flora and

fauna, and entire lakes, rivers, and forests have become the dealers of disease rather than refreshment, health, and pleasure". However, research conducted on individuals who practice the Transcendental Meditation programme indicates that such individuals effectively interact with their environments and have improved resistance to stress (Orme-Johnson 1973; 1:26, 1:27, 1:28, 2:123, 5:370).

Sustainability Principle 8 Central to Jain teaching is the view that pollution of the environment is caused by pollution within ourselves (in other words, our internal condition creates the world we live in), and therefore, each person needs to remake himself or herself in the image of "the divine ideal". Maharishi similarly maintains that all problems in society and the environment are problems created by human weakness and an inability to live in accord with Natural Law. Such a condition is caused by human stress and mental weakness, and is the result of inadequate systems of education. He points out that "all weaknesses or problems in society have their basis in a lack of culture of the human mind, and this in turn is the result of incomplete education. Education is incomplete when it fails to develop the full creativity of the individual and fails to nurture his ability to act in accordance with the laws of nature" (Maharishi European Research University 1979, p. 1).

To correct these problems, including pollution in the environment, we must, according to Maharishi, align our thoughts, speech and action to the intelligence of nature, to the infinite creative intelligence of Natural Law, through proper and complete education. The causal relationship between individual stress and collective stress in the broader environment has been thoroughly explore by a range of researchers, including Alexander (2011), Cavanaugh et al. (2011), and Hagelin (2011), and research on the biochemical indications of reduced personal stress (Jevning et al., 1983; 1:2, 1:3, 1:4, 2:109, 3:194, 3:203, 3:207, 4:291), improved stress reactivity—including lower beta-adrenergic receptor sensitivity, lower blood pressure reactivity to stress, more normal resting blood pressure, and lower resting epinephrine levels (5:367), and increased intelligence (6:472, 6:473, 6:474) have confirmed that Transcendental Meditation significantly reduces levels of stress in humans and as a consequence reduced it in the environment.

Sustainability Principle 9 In order to have a clean, sustainable environment Jains adopt a lifestyle that springs from a moral and spiritual dimension of life; conservation and vegetarianism are at the heart of Jainism. Maharishi (1966, p. 83) has gone further by suggesting that

man's life is meant to be a bridge between divine intelligence and the whole of creation. It exists to cultivate the divine power, intelligence, happiness and abundance, and to give this out to all creation. This is the high purpose of man's life. Man is fortunate in being endowed with the capacity to reach this level through directly contacting the field of the Absolute [i.e., the unified field of pure consciousness], thereby enlarging the conscious capacity of his mind.

As a result of such practice, every human being is "able to project all the values of the Absolute into the world of relative existence for all creatures to enjoy, and to glorify the entire creation of God. Each man is capable of living a life full of values. If he fails to do this he brings shame on himself, and he abuses the glory of the almighty God present within and around him" (Maharishi 1966, p. 83). A life "cultivated in divine power" results in what Maharishi (1973, p. 24) calls the "spiritual rejuvenation of the human race".

"Spiritual" in this context means "concerned with the essential character or meaning of life as expressed dynamically in wholeness and inner harmony" as described by Maharishi Vedic Science, but does not entail "beliefs [or] metaphysical, a priori religious dogmas. It is solely direct experience and its understanding" (Maharishi 1973, p. 24). Consistent with Jain philosophy, Maharishi also points out that

food has a very great influence on the mind because everything we eat and drink is transported by the blood which sustains the nervous system. Therefore the quality of food has a great deal to do with the quality of the mind...it is [also] important how that food has been earned. (Maharishi 1966, pp. 124–125)

In order to test the theory of improved human behaviour as a result of applying Maharishi Vedic Science, research has focused on a range of lifestyle choices, including findings which confirm decreased need for anti-depressants (3:247), decreased use of cigarettes (Alexander et al. 1994; 1:80, 1:84, 2:150, 2:153, 2:161, 2:162, 2:163, 3:239, 3:247, 3:276, 3:280, 3:287, 5:399), decreased use of alcohol (Alexander et al. 1994; 1:73, 1:80, 1:83, 1:84, 1:85, 1:95, 2:126, 2:150, 2:153, 2:162, 2:163, 3:239, 3:247, 3:282, 3:287, 4:313, 5:399), increased intrinsic unifying ability, directedness and spirituality (5:395), increased moral reasoning and moral maturity (1:91, 3:265, 3:270, 4:309) and reduced use of non-prescribed drugs (Alexander et al. 1994; 1:73, 1:79, 1:80, 1:81, 1:82, 1:84, 1:85, 1:86, 1:89, 1:90, 1:95, 2:153, 2:161, 2:162, 2:163, 3:239, 3:247, 3:277, 3:282, 3:287). Moreover, research has identified a distinct correlation between high EEG coherence and both high levels of principled moral reasoning and a unified, "cosmic" perspective on life (3:223).

Sustainability Principle 10 Jains aim, where possible, to avoid generating excessive waste and developing rapacious desires; a low-consumption, moderate (Yukta, युक्त) lifestyle is preferable. Maharishi (1969, p. 307) also points to a verse in the Bhagavad-Gītā, an important aspect of the Vedic Literature, which states: "For him who is moderate in food and recreation, moderate of effort in actions, moderate in sleep and waking, for him is the Yoga which destroys sorrow" (Yuktāhāra vihārasya yukta cheshtasya karmasu yukta svapnāvabodhasya yogo bhavati duḥkhā, युक्ताहारविहारस्य युक्तचेष्टस्य कर्मसु II युक्तस्वप्रावबोधस्य योगो भवति दु:खहा), Bhagavad-Gītā, 6.17). In this context, Maharishi defines "Yoga" as the unified state of pure consciousness.

Maharishi (1969, p. 307) maintains that "Here [in this verse] is the broad principle to be followed by one who wishes to live a life of inner peace and happiness integrated with successful activity in the outside world....One should avoid excess in all things, and be regular in meditation, for this will result in the state of inner peace and freedom from bondage...".

Maharishi (1969, pp. 307–308) goes on to explain that the essential teaching of the verse is "in order to be moderate in food it is necessary to keep the whole system functioning normally. With regular meditation morning and evening, the functioning of the inner mechanisms is maintained in a normal condition, and one becomes by nature 'moderate in food and recreation'". Research on the Transcendental Meditation and TM-Sidhi programme has confirmed that over time, practitioners experience a more balanced mood (1:65, 1:77, 3:277, 4:308), increased emotional stability (Ramirez 1975; 1:65, 1:71, 1:87, 1:93, 1:95, 2:150, 2:153, 3:241, 3:273, 3:277, 3:290, 4:308) and increased autonomic stability (Orme-Johnson 1973; 1:26, 1:27, 1:28, 1:87, 2:123, 2:130, 3:197, 3:205, 5:356), collectively indicating a naturally more balanced and moderate lifestyle.

5 Conclusion

In this study, we have shown that the Jain and Maharishi Vedic Science worldviews of sustainability are largely consistent. Both view nature as an interconnected web of laws of nature and both consider that everything in the universe is interdependent; both worldviews recognise that humans are responsible for conserving and preserving the resources of their environment and that wanton and unnecessary waste generation should be avoided (although we noted that the focus in Maharishi Vedic Science is on developing moderation in behaviour through changing consciousness, whereas the Jain approach is generally focused more on the behavioural levels of life).

Both worldviews also recognise that the environment should not be mistreated or abused, and Maharishi has specifically pointed out that misuse or destruction of the environment deals what he calls "a fatal blow to ourselves because we are indivisible from our surroundings" (World Government of the Age of Enlightenment 1978, p. 9). Moreover, both the Jain and Maharishi Vedic Science worldviews emphasise that in order to create a sustainable future for humanity the individual must first change himself or herself; in other words, if we want a sustainable outcome, we must first change ourselves and then take personal responsibility for creating a better, alternative future.

However, there is a key difference between the two approaches. Maharishi Vedic Science places central emphasis on the development of human consciousness, specifically through the practice of the Transcendental Meditation and TM-Sidhi programme. Certainly, the Jain tradition acknowledges that for changes to occur in society, and for social practices to be aligned with sustainable outcomes, commensurate changes must also be made in the individual. But these are generally associated with changing outcomes by choosing a legitimate means of work, performing service and offering gifts, all of which are noteworthy. Maharishi Vedic Science, on the other hand, focuses its attention on changing behaviour "from within" through the development of consciousness and the growth of higher states of consciousness in which life, on both the individual and collective level, is said to be lived more in accord with Natural Law. Such a life nourishes every aspect and every level of the social and physical environment. Here true sustainability, in all its dimensions, is to be found.

Acknowledgement The authors acknowledge that Transcendental Meditation, TM-Sidhi and other terms used in this paper are subject to trademark protection in many countries worldwide, including the USA.

References

- Abrams, A. I., & Siegel, L. M. (1978). The Transcendental Meditation program and rehabilitation at Folsom State Prison: A cross validation study. *Criminal Justice and Behavior*, 5(1), 3–20.
- Alexander, C. N. (1992). Peaceful body, peaceful mind, peaceful world. *Modern Science and Vedic Science*, 5, 150–164.
- Alexander, C. N. (2011). Peaceful body, peaceful mind, peaceful world. In M. C. Dillbeck (Ed.), Scientific Research on Maharishi's Transcendental Meditation and TM-Sidhi Programme (pp. 4510–4518). Fairfield, IA: Maharishi University of Management Press.
- Alexander, C. N., Rainforth, M. V., & Gelderloos, P. (1991). Transcendental Meditation, self-actualization, and psychological health: A conceptual overview and statistical meta-analysis. *Journal of Social Behavior and Personality*, 6(5), 189–247.
- Alexander, C. N., Robinson, P., & Rainforth, M. (1994). Treating and prevention alcohol, nicotine, and drug abuse through Transcendental Meditation: A review and statistical meta-analysis. *Alcoholism Treatment Quarterly*, 11, 13–87.

- Aron, E. N., & Aron, A. (1982). Transcendental Meditation program and marital status. *Psychological Report*, 51, 887–890.
- Beaufort, M. (2011). Consciousness-based education and art. Fairfield, IA: Maharishi University of Management Press.
- Bhaskar, B. J. (2006). Ecology and spirituality in the Jain tradition. In C. H. Chapple (Ed.), Jainism and ecology: Nonviolence in the Web of Life (pp. 170–180). Delhi: Motilal Banarsidass Publishers.
- Cavanaugh, K. L., King, K. D., & Titus, B. D. (2011). Improving the national economy through alliance with nature's government: Effects of the group practice of Maharishi's Transcendental Meditation and TM-Sidhi program. In M. C. Dillbeck (Ed.), *Scientific Research on Maharishi's Transcendental Meditation and TM-Sidhi Programme* (pp. 4485–4509). Fairfield, IA: Maharishi University of Management Press.
- Chalmers, R., Clements, G., Schenkluhn, H., & Weinless, M. (Eds.). (1989a). Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi programme: Collected papers, (Vol. 2). Vlodrop: Maharishi Vedic University Press.
- Chalmers, R., Clements, G., Schenkluhn, H., & Weinless, M. (Eds.). (1989b). Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi programme: Collected Papers (Vol. 3). Vlodrop: Maharishi Vedic University Press.
- Chalmers, R., Clements, G., Schenkluhn, H., & Weinless, M. (Eds.). (1989c). Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi programme: Collected Papers (Vol. 4). Vlodrop: Maharishi Vedic University Press.
- Chandler, K. (2011). Modern science and Vedic science: An introduction. In M. Scaroni-Fisher and D. Fisher (Eds.), Consciousness-based Education and Sustainability, Volume 11 (pp. 397–430), Consciousness-based Education: A Foundation for Teaching and Learning in the Academic Disciplines (a series of 12 volumes), Fairfield, IA: Maharishi University of Management Press.
- Chapple, C. H. (Ed.). (2006a). Jainism and ecology: Nonviolence in the web of life. Delhi: Motilal Banarsidass Publishers.
- Chapple, C. H. (2006b). Jainism and ecology: Transformation of tradition. In R. S. Gottleib (Ed.), The Oxford Handbook of Religion and Ecology (pp. 147–159). Oxford: Oxford University Press.
- Cort, J. E. (2006). Green Jainism? Notes and queries toward a possible Jain environmental ethic. In C. H. Chapple (Ed.), Jainism and ecology: Nonviolence in the Web of Life (pp. 63–94). Delhi: Motilal Banarsidass Publishers.
- Davies, J. L., & Alexander, C. N. (2005). Alleviating political violence through reducing collective tension: Impact assessment analysis of the Lebanon war. *Journal of Social Behavior and Personality*, 17(1), 285–338.
- Dillbeck, M. C. (Ed.). (2011). Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi programme: Collected Papers (Vol. 6). Fairfield, IA: Maharishi University of Management Press.
- Dillbeck, S. L., & Dillbeck, M. C. (1997). Twenty-five years of unfolding knowledge of pure consciousness through Maharishi Vedic Science: Introduction to the issue. *Modern Science and Vedic Science*, 7(1), 1–36.
- Dundas, P. (2006). The limits of a Jain environmental ethic. In C. H. Chapple (Ed.), Jainism and ecology: Nonviolence in the Web of Life (pp. 95–117). Delhi: Motilal Banarsidass Publishers.
- Fagan, J. (2011). Feeding the world without genetic engineering or chemical poisons—Maharishi Vedic approach to sustainable agriculture. In M. Scaroni-Fisher and D. Fisher (Eds.), *Consciousnessbased Education and Sustainability, Volume 11* (pp. 107–121), Consciousness-based Education: A Foundation for Teaching and Learning in the Academic Disciplines (a series of 12 volumes), Maharishi University of Management Press, Fairfield, IA, USA.
- Fergusson, L. (1992). Field independence and art achievement in meditating and nonmeditating college students. *Perceptual and Motor Skills*, 75, 1171–1175.
- Fergusson, L., & Bonshek, A. (2013). Maharishi Vedic University in Cambodia: Educational reconstruction and social renewal. Gold Coast: Prana World Publishing.
- Fergusson, L., & Bonshek, A. (Eds.). (2015). The unmanifest canvas: Maharishi Mahesh Yogi on the arts, creativity and perception. Fairfield, IA: Maharishi University of Management Press.
- Fergusson, L., Kettle, D., & Wells, G. (2017a). Indigenous accounts of environmental stewardship in light of the theory and language of Maharishi Vedic Science. *International Journal of Society, Culture and Language*, 5(1), 68–81.
- Fergusson, L., Wells, G., & Kettle, D. (2017b). The principles and practice of sustainability in Maharishi Vedic Science. Journal of Health and Environmental Research, 3(3–1), 1–15.
- Foucault, M. (1970). The order of things: An archaeology of the human sciences. New York: Random House.

- Frew, D. R. (1974). Transcendental Meditation and productivity. Academy of Management Journal, 16, 362–368.
- Geisler, M. (1978). Therapeutische wirkungen der Transzendentalen Meditation auf drogenkonsumenten. Zeitschrift für Klinische Psychologie, 7(4), 235–255.
- Gorini, C. A. (1997). How Maharishi Vedic Science answers the questions of the unreasonable effectiveness of mathematics in the sciences. *Modern Science and Vedic Science*, 7(1), 181–190.
- Gottleib, R. S. (Ed.). (2006). *The Oxford handbook of religion and ecology*. Oxford: Oxford University Press.
- Grant, J. D., & Jones, C. H. (1997). The significance of pure consciousness for education. Modern Science and Vedic Science, 7(1), 39–70.
- Guthrie, G. (1997). Vedic computation: Redefining computer science in the light of Maharishi Vedic Science. *Modern Science and Vedic Science*, 7(1), 193–223.
- Hagelin, J. S. (1987a). Is consciousness the unified field? A field theorist's perspective. Modern Science and Vedic Science, 1(1), 29–87.
- Hagelin, J. S. (1987b). Restructuring physics from its foundation in the light of Maharishi's Vedic Science. Modern Science and Vedic Science, 3(1), 3–72.
- Hagelin, J. S. (2011). Achieving world peace through a new science and technology. In M. C. Dillbeck (Ed.), Scientific Research on Maharishi's Transcendental Meditation and TM-Sidhi Programme (pp. 4534–4552). Fairfield, IA: Maharishi University of Management Press.
- Heaton, D. (2016). Higher consciousness for sustainability-as-flourishing. In S. Dhiman & J. Marques (Eds.), Spirituality and Sustainability: New Horizons and Exemplary Approaches (pp. 121–137). Cham: Springer.
- Herron, R. E. (2005). Can the Transcendental Meditation program reduce medical expenditures of older people? A longitudinal medical cost minimization study in Canada. *Journal of Social Behavior and Personality*, 17(1), 415–442.
- Herron, R. E., & Graff, W. W. (2011). The intelligence model of organizational effectiveness: Its implications for enhanced productivity. In M. C. Dillbeck (Ed.), *Scientific Research on Maharishi's Transcendental Meditation and TM-Sidhi Programme* (pp. 4467–4471). Fairfield, IA: Maharishi University of Management Press.
- Jain, P. (2011). Dharma and ecology of Hindu communities: Sustenance and sustainability. Surrey: Ashgate Publishing.
- Jaini, P. S. (2006). Ecology, economics, and development in Jainism. In C. H. Chapple (Ed.), Jainism and ecology: Nonviolence in the Web of Life (pp. 141–156). Delhi: Motilal Banarsidass Publishers.
- Jevning, R., Wilson, A. F., Pirkle, H., O-Halloran, J. P., & Walsh, R. N. (1983). Metabolic control in a state of decreased activation: Modulation of red cell metabolism. *American Journal of Physiology*, 245, C457–C461.
- King, M. S. (1987). Transcendental Meditation, consciousness and government. Perth: Gantheaume Press.
- Kumar, S. (2006). Jain ecology. In C. H. Chapple (Ed.), Jainism and Ecology: Nonviolence in the Web of Life (pp. 181–190). Delhi: Motilal Banarsidass Publishers.
- Kumar, J., & Narayan, R. (2003). Ecology and religion: Ecological concepts in Hinduism, Buddhism, Jainism, Islam, Christianity and Sikhism. Muzaffarpur: Institute for Socio-Legal Studies.
- Maharishi European Research University. (1979). Making education ideal through the Transcendental Meditation programme and the Science of Creative Intelligence. Rheinweiler: Maharishi European Research University.
- Maharishi European Research University. (1984). Maharishi technology of the unified field: Results of scientific research on the Transcendental Meditation and TM-Sidhi programme. Fairfield, IA: Maharishi International University Press.
- Maharishi International College for the Age of Enlightenment. (1977). *The fulfilment of law, justice and rehabilitation through the development of consciousness*. West Germany: Maharishi European Research University Press.
- Maharishi Mahesh Yogi. (1957). Beacon light of the Himalayas. Kerala: International Meditation Society.
- Maharishi Mahesh Yogi. (1966). The science of being and art of living. Washington, DC: Age of Enlightenment Press.
- Maharishi Mahesh Yogi. (1969). Maharishi Mahesh Yogi on the Bhagavad-Gita: A new translation and commentary, chapters 1-6. London: Penguin.
- Maharishi Mahesh Yogi. (1973). Alliance for knowledge. West Germany: Maharishi International University Press.
- Maharishi Mahesh Yogi. (1977). Enlightenment in world psychiatry: The Transcendental Meditation technique new light on consciousness. West Germany: Maharishi European Research University Press.

- Maharishi Mahesh Yogi. (1978). Enlightenment for every individual, invincibility to every nation. Germany: Maharishi European University Press.
- Maharishi Mahesh Yogi. (1986). Life supported by natural law: Lectures by His Holiness Maharishi Mahesh Yogi to the World Assembly on Vedic Science July 9–17, 1985. Washington, DC: Age of Enlightenment Press.
- Maharishi Mahesh Yogi. (1994). Maharishi Vedic University: Introduction. Holland: Maharishi Vedic University Press.
- Maharishi Mahesh Yogi. (1995). Maharishi's absolute theory of government: Automation in administration. Delhi: Maharishi Ved Vigyan Vishwa Vidya Peetham.
- Maharishi Mahesh Yogi. (1998). Celebrating perfection in administration: Creating invincible India. India: Maharishi Vedic University Press.
- Maharishi Mahesh Yogi. (2011). The science of being and art of living. [E-Reader version]. Maharishi University of Management Press, Fairfield, IA USA (the original version of this book was copyrighted in 1963 by the S.R.M. Foundation of India).
- McLeod-Kilmurray, H. (2011). Vegetarianism and food governance: Sustainability and ecological justice. In K. Bosselmann, L. Westra, & C. Soskolne (Eds.), *Globalisation and Ecological Integrity in Science* and International Law (pp. 57–76). Cambridge: Cambridge Scholars Publishing.
- Middlemiss, L. (2010). Reframing individual responsibility for sustainable consumption: Lessons from environmental justice and ecological citizenship. *Environmental Values*, 19(2), 147–167.
- Nader, T. (1993). Human physiology: Expression of Veda and the Vedic literature—modern science and ancient Vedic science discover the fabrics of immortality in the human physiology. Vlodrop: Maharishi Vedic University Press.
- Nader, T. (2012). Rāmāyan in human physiology: Discovery of the eternal reality of the Rāmāyan in the structure and function of human physiology. Fairfield, IA: Maharishi University of Management Press.
- Orme-Johnson, D. W. (1973). Autonomic stability and Transcendental Meditation. Psychosomatic Medicine, 35, 341–349.
- Orme-Johnson, D. W., & Farrow, J. T. (Eds.). (1977). Scientific research on the Transcendental Meditation program: Collected papers, (Vol. 1). Rheinweiler: Maharishi European Research University Press.
- Ramirez, J. R. (1975). The Transcendental Meditation program as a possible treatment modality for drug offenders: Evaluation of a pilot project at Milan Federal Correctional Institution. Bloomington, Indiana: Department of Forensic Studies, Indiana University.
- Scaroni-Fisher, M., & Fisher, D. (Ed.). (2011). Consciousness-based education and sustainability, volume 11. Consciousness-based Education: A Foundation for Teaching and Learning in the Academic Disciplines (a series of 12 volumes), Maharishi University of Management Press, Fairfield, IA, USA.
- Schmidt-Wilk, J., Alexander, C. N., & Swanson, G. C. (1997). Developing consciousness in organizations: The Transcendental Meditation program in business. *Journal of Business and Psychology*, 10(4), 429–444.
- Shilapi, S. (2006). The environmental and ecological teachings of Tirthankara Mahāvīra. In C. H. Chapple (Ed.), Jainism and ecology: Nonviolence in the Web of Life (pp. 160–167). Delhi: Motilal Banarsidass Publishers.
- Singhvi, L. M. (1990). The Jain declaration on nature. London: Institute of Jainology.
- Singhvi, L. M. (2006). The Jain declaration on nature. In C. H. Chapple (Ed.), Jainism and ecology: Nonviolence in the Web of Life (pp. 217–224). Delhi: Motilal Banarsidass Publishers.
- Swanson, G., & Oates, R. (1989). Enlightened management: Building high-performance people. Fairfield, IA: Maharishi International University Press.
- Tatia, N. (2006). The Jain worldview and ecology. In C. H. Chapple (Ed.), Jainism and Ecology: Nonviolence in the Web of Life (pp. 4–18). Delhi: Motilal Banarsidass Publishers.
- Tobias, M. (2008). Jainism and ecology: Views of nature, non-violence, and vegetarianism. *The Bucknell Review*, 37(2), 138.
- Vallely, A. (2006). From liberation to ecology: Ethical discourses among orthodox and diaspora Jains. In C. H. Chapple (Ed.), *Jainism and Ecology: Nonviolence in the Web of Life* (pp. 193–216). Delhi: Motilal Banarsidass Publishers.
- Vannucci, M. (1999). Human ecology in the Vedas. Restructuring Indian History & Culture, No. 19, D.K. Printworld, New Delhi, India.
- Wallace, R. K. (1970). Physiological effects of Transcendental Meditation. Science, 167, 1751–1754.
- Wallace, P.G. (2011). Approaching material well-being: Maharishi Vedic organic agriculture. In M. Scaroni-Fisher and D. Fisher (Eds.), *Consciousness-based Education and Sustainability, Volume 11* [pp. 123–217], Consciousness-based Education: A Foundation for Teaching and Learning in the Academic Disciplines (a series of 12 volumes), Maharishi University of Management Press, Fairfield, IA, USA.

- Wallace, R. K., Orme-Johnson, D. W., & Dillbeck, M. C. (Eds.). (1990). Scientific research on Maharishi's Transcendental Meditation and TM-Sidhi program: Collected papers, (Vol. 5). Fairfield, IA: Maharishi International University Press.
- World Government of the Age of Enlightenment. (1978). A time of crisis: Environment. World Government News, 9, 5–13.

Yam, D. (2009). Mad cow disease. Scientific American, 301, 89.