

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/352859633>

HeartMath as Scientific Meditation Method in Dialogue with Theological Phenomena

Article · June 2021

DOI: 10.51917/dialogo.2021.7.2.1

CITATIONS

0

READS

5

1 author:



[Stephen David Edwards](#)

University of Zululand

249 PUBLICATIONS 1,548 CITATIONS

[SEE PROFILE](#)

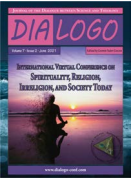
Some of the authors of this publication are also working on these related projects:



SHAME - ITS VALUE, BRIGHT SIDE AND MEANING IN CULTURES AND INDUSTRY 4.0 [View project](#)



Psychology in Africa with special reference to indigenous healing [View project](#)



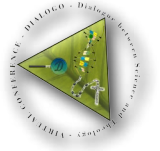
DIALOGO

CONFERENCES & JOURNAL

journal homepage: <http://dialogo-conf.com>

This paper was presented in the
The Virtual International Conference on Spirituality, Religion, Irreligion, and
Society today, (IVC2021SRIS)

held online, on the Journal's website,
from MAY 21-29, 2021



SECTION 1

HeartMath as Scientific Meditation Method in Dialogue with Theological Phenomena



Stephen David EDWARDS, PhD DEd
Professor Emeritus at the Psychology Department;
University of Zululand
Private Bag X1001, KwaDlangezwa 3886
Richards Bay, SOUTH AFRICA
profsdedwards@gmail.com

ARTICLE INFO

Article history:

Received 22 February 2021
Received in revised form 12 March
Accepted 20 April 2021
Available online 30 June 2021
doi: [10.51917/dialogo.2021.7.2.1](https://doi.org/10.51917/dialogo.2021.7.2.1)

Keywords:

HeartMath; Scientific meditation;
Global Coherence Initiative; Dialogue;
Theological phenomena;

ABSTRACT

The HeartMath Institute originated in 1991 through Doc Childre's vision of promoting heart intelligence and health. The HeartMath system is an interdisciplinary undertaking, which bridges natural, human, social, spiritual, and ecological sciences, with the goal of promoting personal, social, and global coherence. The general goal of this paper is to introduce HeartMath as a coherent scientific approach to dialogue theological information, as well as a specific meditation method to explore theological phenomena. The particular aim is to contribute a theoretical and practically orientated pilot study with heuristic phenomenological reflection on personal experience of HeartMath theory, practice, meditation, related action, and reports in the form of scientific articles. This study is directly relevant to the DIALOGO conference theme of dialogue between science and theology. Methodology concerns the theoretical and practical value of HeartMath meditation methods as described with examples from HeartMath Global Coherence (GC) and Inner Balance (IB) apps. There are five GC reflective meditations on the theme of science and theology, complemented by five IB purely contemplative meditations. The reflective and discursive focus of the paper is on the monitoring of meditation sessions related to science and theology. The specific focus is on HeartMath techniques, electronic devices, and the planetary health potential of the Global Coherence Initiative.

© 2014 Journal of RCDST Intellectual property. All rights reserved.

Session 1. Spiritual Wellness

eISSN: 2393-1744, cdlISSN: 2392-9928
printISSN: 2457-9297, ISSN-L 2392-9928

Copyright © 2021 Stephen David Edwards. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Edwards, Stephen David . "HeartMath as Scientific Meditation Method in Dialogue with Theological Phenomena." *DIALOGO*, eISSN: 2393-1744, printISSN: 2457-9297, vol. 7, issue 2 (May 2021): pp. 23-34. DOI: [10.51917/dialogo.2021.7.2.1](https://doi.org/10.51917/dialogo.2021.7.2.1)

I. INTRODUCTION

The present author's regular meditation practice is Christian contemplation, inspired by African wisdom traditions, founded on reverently recalling and revering historical individuals, families and groups, who contribute significantly to human health and well-being. In Zulu traditions, this is the specialized role of shaman/diviner/priest/healers, *isangoma*, *umthandazi*, and *inyanga*, who practice various ancestral breath/spirit/heart healing methods, typically in group context accompanied by invocation, drumming, and dance. For example, SHISO, a respectful name for a human being, became an acronym for a healing method, invoking Spirit (*umoya*), Heart (*inhlizyo*), Image (*umcabango*), Soul (*umphefumulo*), and Oneness (*ubunye*). It was research in this tradition that led to the collaboration with Dr. Rollin McCraty, HeartMath Research Director, and the African Global Coherence Initiative Magnetometer at Bonamanzi, near Hluhluwe in Zululand [4, 4]. This background history formed the motivation for the present study. Final motivation came in the form of keynote speaker invitation from the DIALOGO journal and conferences organizes, Dr. Tina Lindhard and Dr. Ciocan Tudor Cosmin.

This specific contribution is intended as a sequel to a previous study, which compared global coherence, healing meditations using HeartMath electronic applications (apps) before and during the South African lockdown. Contrary to expectations, findings indicated significant and meaningful changes in meditation behaviour and global coherence magnetometer readings. In their elucidation of natural scientific features of heart rate variability coherence, in relation with experiential descriptions from meditation methods informed by Christian and other wisdom traditions, findings provided substantial evidence for the effectiveness of the HeartMath system when

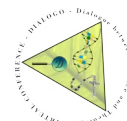
dealing with information that distinguishes and bridges traditional scientific and theological domains [2, 157]. This seemed an entirely appropriate DIALOGO theme.

The aim is a pilot study to introduce HeartMath as the coherent scientific approach to dialogue theological information. Specific emphasis is on HeartMath meditation methods, emerging phenomena, and implications.

A. Definition of Terms

The theme of this conference, on the dialogue between science and theology, reflects traditional disparate perceptions of the domains and methods of these disciplines. Over time, boundaries between domains have dissolved and rigid disciplinary categories have collapsed. Today science is not only concerned with natural scientific investigations into the physical world, and theology is not limited to qualitative phenomenological inquiry or revelatory explications of the experience and/or meaning of God. Contemporary views are more in accord with a perennial philosophy or spectrum of being, energy, and consciousness, intimately interconnecting natural, psychological, social, ecological, and theological sciences. In this context, theological sciences extend beyond the study (logy) of God (Theos) and religious belief to include atheism, spirituality and such categories as spiritual but not religious (SBNR).

Contemporary connotations of the term "science" subsume domains, products, and processes that include quantitative, qualitative, mixed, and integrative methods, applicable to any field of inquiry, event, practice, or phenomena. Typical steps in the scientific research process include observation, questions, hypotheses testing, data collection and analysis, concluding and reporting. A deeper, open-minded, non-judgmental approach consists of



three phases: injunction, apprehension and confirmation/rejection [4, 267]. Rephrased in simple terms, this means a “do, discover, decide” sequence. For example, one needs to practice meditation before observing and evaluating it. In other words, meditation is scientific if one applies a scientific method to meditation. This is the approach taken in the present study which integrates theoretical and practical meditation information. It should also be noted that although a scientific meditation method such as HeartMath may follow a rational, logical, “if-then” process, this does not necessarily imply rational or logical outcomes, or exclude the apprehension of post-rational, transcendent phenomena, typical of many theological apprehensions and revelations.

In this study, meditation is used in the broad sense as reflected in its Latin roots (*meditari*), which means to contemplate or reflect. Many wisdom, spiritual and/or healing traditions employ prayer, meditation and/or contemplation for transforming consciousness [1, 87]. Meditation traditions have often been broadly classified into concentration and mindfulness meditation categories [1, 5]. The particular focus of this paper is on HeartMath as a scientific meditation method that combines relaxation, concentration, and mindfulness in contemplation.

B. Background to the HeartMath system

The HeartMath Institute was pioneered in 1991 in California by Doc Childre, a stress researcher, to promote heart-focused intelligence and health. The HeartMath interdisciplinary team goal of promoting personal, social and global coherence leads to excellent studies on coherence and interconnectedness [2, 125].

Early psychophysiological research consistently highlighted the hormonal, biophysical, neurochemical, electromagnetic

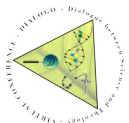
and intuitive functions of the heart [2, 41]. Subsequent studies coherently pointed to energetic heart communication of personal, social and global health information [2, 45]. Other studies have developed practical tools for stress reduction as well as health and performance promotion [2, 181].

As a scientific form of meditation, HeartMath electronic equipment can be used for providing quantitative and qualitative monitoring of meditation sessions for coherent heart rate variability (HRV) training, and biofeedback, if so desired. Quantitative monitoring is provided in the form of mean coherence and achievement scores for any particular meditation session. Qualitative monitoring is facilitated by an electronic diary for the description of meditation experiences.

II. METHOD

A. HeartMath’s coherence approach

Heart Math’s coherence approach includes all usual meanings of the term coherence and more, as implied in the view that the whole is more than the sum of its parts. This includes its common usage as implied in such terms as integrity, connectedness, order, stability, consistency, harmony, synchrony and logical relatedness of an argument or thesis. In language, coherence means intelligibility. In physics, it implies phase relationships. In math and statistics, it includes correlation. In dynamic systems theory, it implies alignment, resonance, and optimal energy utilization [2, 67]. Although accusations of pseudoscience have been leveled at the HeartMath System by some traditional, fundamentally orientated natural scientists, many HeartMath studies are in fact based on generally accepted empirical foundations As implied in the name “HeartMath” this heart mathematics applies in various domains,



physical, social and global, all supported by independent HRV and biofeedback studies [2, 85].

B. Pilot study illustrating heuristic phenomenological reflection on HeartMath meditation praxis

This pilot study is based on heuristic phenomenological reflection on eight years of personal experience of HeartMath practice, meditation, related action, and various scientific articles available from the HeartMath Research library.

Depending upon theological, societal and individual expectations, experience and preference, HeartMath's diverse tools, techniques and devices may be practiced by meditators from various faith, spiritual and religious persuasions. In Christian meditation for example, depending on the prayer type used, studies indicate varying levels of improvements in psychophysiological coherence and HRV. Findings have consistently indicated that physiological coherence levels are highest with contemplative heart prayer [8, 830].

C. Instruments

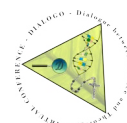
Detailed information on HeartMath tools, techniques and electronic devices are available on the HeartMath website at www.HeartMath.org. Two examples of techniques follow:

HeartMath meditation practice is integral heart, breath, and energy-based. Scientific evidence exists as to its efficacy to transform stress, build resilience, and promote energy, health and performance, in preparing for challenges and adapting resiliently after challenges, through sustained regular HeartMath practice. HeartMath studies show that positive and renewing emotions are independently linked to psychophysiological coherence.

However, most tools begin with heart-linked respiration to initiate natural respiratory sinus arrhythmia (RSA), modulate heart rhythms, and facilitate focus on a positive and renewing emotion [2, 185].

Depletion to Renewal Grid. The technique consists of visualizing the autonomic nervous system (ANS) along the vertical axis of a graph and the hormonal system along the horizontal axis. The ANS sympathetic division is linked with high heart rates and the parasympathetic division with low heart rates. Depleting, negative emotions are associated with the stress hormone, cortisol, and renewing, positive emotions linked to the growth hormone, dehydroepiandrosterone or DHEA. This visualization technique helps reduce cortisol, which can otherwise last for eighteen hours in the body. On the other hand, DHEA increases significantly through the practice of HeartMath techniques such as Heart Lock-In, Optimal coherence is associated with improved health and performance and what sports persons describe as zone experiences [2, 75].

Heart Lock-In. involves deep, integral, heart focus with awareness of heartbeat rhythm and slower relaxed respiration, typically at the 0.1 hertz or ten-second rhythm, which approximates the resonant frequency of the planet and optimizes entrainment of all physiological systems as well as social and global coherence interconnectedness. For deeper meditation experiences, slow relaxed, longer heart-beat centered, rhythmic respiration cycles of three or less per minute may be practiced to approximate delta-theta (or spirit-soul) craniosacral rhythm. The positive renewing emotion may be apprehended as joy (ecstatic-bliss - bliss with more parasympathetic involvement, ecstasy with more sympathetic involvement). Here one is surfing on the sympathetic borderline so this is why maintaining ongoing continual relaxation using the vagal brake



is so important. Once a regular rhythm is established positive renewing feelings of love, care or appreciation are cultivated and radiated to specific people and/or planet. This technique facilitates all forms of meditation, prayer and contemplation [2, 113].

Electronic Devices

The instruments used in this study, the Global Coherence (GC) and Inner Balance (IB) applications (apps) can be downloaded freely from the internet. Purchased HeartMath Equipment consists of photoplethysmography sensors attached to one's eye lobe and a suitable smartphone, e.g. iPhone. The GC app can be used in conjunction with the IB. The IB monitors HRV, heart rhythm coherence biofeedback and provides a graphic illustration of optimal, autonomic nervous system functioning. Both apps can be simply used for meditation monitoring without biofeedback. IB biofeedback includes an adjustable breath pacer, coherence means and achievement totals. An electronic diary is available for experiential descriptions of apprehensions, phenomena, insights and events arising during meditation sessions. The GC app monitors individual, group and global coherence and achievement information. GC records mean scores per session. Achievement data is continually updated and thus unreliable for calculations. However, the IB electronic diary can be used for quantitative and qualitative descriptions of individual, group and global coherence meditation sessions. In the present study, the GC app was used in the morning and the IB app in the afternoon. The main focus was on qualitative experiential GC descriptions related to the theme of science and theology, with IB used for afternoon contemplations sessions.

D. Ethical Considerations

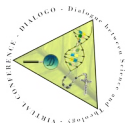
The Zululand University research

committee, project number S894/97 provided institutional permission. As a registered clinical, psychologist and licensed HeartMath coach and mentor, the author had appropriate professional qualifications.

III. PILOT STUDY FINDINGS

Global Coherence Findings. Pilot study findings refer to five meditations conducted for illustrative purposes on five consecutive days, 13 through 17 February 2021. The app was used for both monitoring and biofeedback purposes to ensure a mean coherence level of at least 6 for each session. Length of meditation session varied. The respective length of sessions was 28, 60, 52, 11 and 32 minutes respectively. As my wife Sandy and I live near the sea, each session's typical initial, eyes-closed, context may be described in terms of sounds of "glistening silence" and "surging sea". The biofeedback function with eyes open took place towards the end of each session. All sessions used reflective, heart-based breathing and radiation of renewing and healing feelings. Qualitative apprehensions from individual GC dated sessions were as follows. As distinct from the IB pure contemplation sessions, GC sessions were intensely reflective, or meta-reflective, in scanning various phenomena and subsequent write-up. Apologies are therefore extended to the reader for the density of the descriptions and the collapsed paragraphing.

GC: 13-2-2021. This meditation, on meditation, included awareness of reflexivity in witnessing phenomena arising from meditation realms. Common meditation phenomena include gross, subtle, and causal realms, pulsation, heartbeat rhythm, breath, and energy sentience, awareness, consciousness, and conscience. Discernments include will and intention; exoteric and esoteric features; openness, emptiness, and peace; silence and stillness; immanence and transcendence;

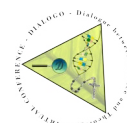


joy, bliss, and ecstasy; linkages to particular meditation cultures; Hindu, Buddhist, Taoist, Jewish, Christian, and Islamic. Mean Coherence levels of around 6, are typically lower in comparison to deep contemplation, where the mean coherence level reaches 7, 8 or 9. Today's meditation session included dual consciousness realms as reflexivity was required in order to clearly remember meditation phenomena arising during the session. With higher coherence in contemplation, consciousness may simply feature silence, light, and love, for example, if the intention is to access one's best Self, Christ consciousness, Divine Consciousness, Cosmic consciousness, Unity or Nondual consciousness, and related integrity morality, etc. On the other hand, radiant energy dispersion accompanies interceding or healing or teaching or, as directed towards needy, suffering people or planet in general. However, all these discernments are in fact superficial, as all are included when coherence increases with more direct one-on-one contact with the highest Self, Being Consciousness etc. Here I and Thou merge, as do information, phenomena, science, theology, in dazzling originality, uniqueness, authenticity, infinite Beauty and Perfection.

GC: 14-2-2021. Life is a gift of God's grace with radical freedom to realize the Self in and through the Divine Other and others. This was the main arising feeling in a session in which I decided to meditate for an hour and observe coherence. Experience teaches there is a general contemplation correlation, but as in Christ's Sermon on the Mount, great blessings come from low and high coherence levels. Is Spirit like the Wind? We used to teach students that God helps those who help themselves and others as in the commandment of loving God and others. Concerning entropy, there seems a correlation with performance. Although a mean coherence level of eight may be attained with achievement motivation and

sustained relaxation and concentration over ten minutes, this would be difficult to sustain over an hour. GC is used more than IB as it is specifically designed for group and global coherence and healing as indicated in various studies on the HeartMath Research library and Global Coherence Initiative websites. However, there are only 55632 GC members at present and some mathematical extrapolations indicated a critical mass of sixty thousand persons practicing for significant statistical effects to be observed. Faith and/or science? Certainly, in my case, there is the faith that even though individual global healing effects may be minuscule in a planetary perspective, my heart and limited scientific brain calculations regard this as the best current scientific-based practice. In this meditation and the previous one, most meditation time was spent in a savasana position lying on my back and then topping this up to mean level 6 using GC app as a biofeedback device in faith that higher mean coherence levels will effect greater global healing change. Meditation repeatedly reminds us that we are representatives of the world, universe or cosmos, that we are universal, differential and unique beings, and that we are part of everything and have everything in us, with vast moral responsibilities to make the world a better place. From a healing perspective, this includes interventions with persons with various faith-based practices that range from most fundamental to particularly individuated forms.

GC: 15-2-2021. This was a reflective meditation session that scanned various theological, spiritual, psychological, and transpersonal traditions concerning particularly works of well-known authors such as Pierre Teilhard De Chardin, Daniel Reid, Huston Smith, Frithjof Schuon, and Cynthia Bourgeault. The main focus was on heart-breath rhythm transcendence, stemming from my African community and family story, relationships with traditional

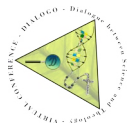


Zulu healers, and how the development of an African heart-breath workshop, SHISO, led to collaborative HeartMath, African Global Coherence Initiative (GCI) Magnetometer installation one week after son David's wedding at Bonamanzi Game Reserve. The SHISO workshop uses an old, isiZulu, respectful term for a human being, Shiso, as an acronym for a healing event focusing on Spirit (*umoya*), Heart (*inhliziy*), Image (*umcabango*), Soul (*umphefumulo*) and Oneness (*ubunye*). For interested persons the video of this story accompanied by beautiful South African music by the late Johnny Clegg may be viewed at <https://www.heartmath.org/gci/gcms/heartmath-south-africa-global-coherence-monitoring-system-installation/>. This reflective meditation reverie connected Africa with Spain, Christianity with Islam, the Inquisition, the Divine Feminine, and such heroines as Hypatia in Alexandria and Teresa of Avilla. There was a typical meditation experience of how everything is interlinked through the noosphere of human, communal, spiritual networks. Interestingly interconnected in COVID-19 struggling times are the slogans "All for One and one for All" and "An injury to one is an injury to all."

GC: 16-2-21. In my view, meditations from different wisdom traditions are essentially complementary and form part of a total spectrum. Certainly, this is the case with heart-based meditations such as heart prayer, centering Prayer and the relaxation response, where there is no emphasis on breath and only focus on out-breath respectively. This session used both to complement and compare with HeartMath. As my Centering prayer, gestural, releasing, heartbeat inhale: exhale, ratio pattern is usually 2:3 there is still relatively more sympathetic involvement than a typically relaxed entropic pattern where exhale is twice as long as inhale. In the past, I have experimented with various heart-beat breathing patterns, yet this 2:3 pattern

seems default in my case. Using recently published articles as a point of departure, the present paper's meditational discourse has focussed on HeartMath as heart prayer. This has been excellently scientifically investigated by Olga Louchakova, especially in the Christian and Sufi contexts. Coming home to our eternal, sacred, global heart of the world, HeartMath praxis may reflect symmetry or asymmetry of heart rhythm, as hidden face and voice of God, immanent and transcendent Spirit, the authenticity of a searcher, and depth of the level of realization or revelation. This is the ongoing journey of connection via heart, of Yoga Nidra, Benson's relaxation response, Heart prayer, heart-focused out-breath, varying breath and heartbeat, and creativity of designing researcher. Ken Wilber's integral philosophy and consciousness exploration work are excellent with regard to argument explication around meditation and science. One might say he almost reinvented the wheel with regard to such questions: What is theology? What is science? Where do they begin, meet, and end? How are they related? The present meditation then settled on phenomenology as intention in the interrelatedness of everything and all phenomena. Open-ended heart prayer returned to focus on global healing. There was the apprehension of the humility of the soul in the heart as "infinitely gentle, infinitely suffering" and point of pure nothingness belonging only to God, a la Thomas Merton's *point vierge*. HeartMath prayer for peace connection followed, with faith that HeartMath will structure and send coherent global conscience messages of love and peace.

GC: 17-2-21. Meditation apprehension was of HeartMath as providing peace, symmetry and structure for direct download from God/Spirit. Reflection arose that Fitbit sleep scale usually classifies meditation as rapid eye movement (REM) or light sleep. Much meditation for scientific papers is usually



done in the early morning as this is the best possible time for the best direct download from God and highest or best Self. So this can mean some loss of sleep, especially when using relaxation response and Centering prayer. One particular personal advantage of HeartMath praxis is that it also helps with mild emphysema and hay fever, recently related to air pollution that occurs near big cities like Durban, which lies about 16 kilometers south of where we live.

Inner Balance Findings. The IB quantitative data over 5 days is really only reported here for sake of completion. These were mean coherence, achievement, pulse and meditation session time in minutes, which yielded scores of 7.3, 1079, 54 and 12.6 respectively. These were all contemplation sessions typically radiating healing, life, love and light. Both IB and GC meditation sessions used a longer respiration pattern developed in 2020 at the same time as learning of COVID 19. They reflected intuition of immanent spirit in nature with its deeper rhythms, for example, facilitating connection with slower, soft, silent, smooth, spiritual, spiraling rhythms of trees, universal Heart of the cosmos and radiating intentional healing to a polluted planet. Although Prayer of the Heart and Centering Prayer writers describe the contemplation process well, my perennial favorite is William Wordsworth's famous poem Tintern Abbey, especially the following lines.

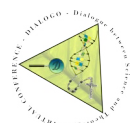
“And I have felt

A presence that disturbs me with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean, and the living air,
And the blue sky, and in the mind of man,
A motion and a spirit, that impels
All thinking things, all objects of all thought,
And rolls through all things.”

IV. DISCUSSION

This pilot study has been concerned with a global and personal meditational perspective on this Dialogo conference paper theme of HeartMath as a scientific meditation method in dialogue with theological phenomena. The reflective focus is on HeartMath as theoretical and applied science concerned with monitoring and measuring the heart rate variability and related theological and psychophysiological, especially autonomic nervous system functioning. Five meditation sessions have been used as illustrative examples. Readers are referred to an earlier study [4, 1] for in-depth examples of empirical and heuristic phenomenological research, which analyzed and synthesized quantitative and qualitative data collected from 153 individual meditation sessions using both Global Coherence and Inner Balance apps. There are many other areas in which HeartMath has great value as indicated on the HeartMath research library. One particularly interesting avenue is the integral evaluation of quantitative and qualitative dimensions of such phenomena as Christ Consciousness and joy in small group studies with samples of about ten selected participants, who have a special experience of the particular phenomenon, are able to articulate their apprehensions, and evaluate the study. We have done many such studies. Other examples include *Umoya* (Spirit in isiZulu), Emptiness, (Sunyata in Buddhist traditions) Christian Trinity meditation, etc., which can be accessed on the ResearchGate website at: https://www.researchgate.net/profile/Stephen_Edwards11.

In individual meditations, typical HeartMath praxis is similar to yogic, pranayama, energy breathing or Taoist microcosmic light circulation. For example, HeartMath instructions are to breathe slightly slower and evenly on both in-breath and out-breath, for example, five seconds on inspiration and five seconds on

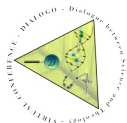


exhalation, while focusing on the heartbeat rhythm and generating a renewing emotion such as peace or love from the heart area. Cross-coherence among physiological systems, such as blood pressure and EEG alpha waves is established in minutes. This activates approximate optimal resonance for most people, with scientific fine-tuning sometimes needed to optimize each individual resonance cycle. If individuals are in groups, depending upon the creativity of the researcher, various process and outcome evaluative designs are possible; simple pretest-posttest, with or without control groups, etc., with fully randomized controlled trials being the conventional, scientific “gold standard.” Furthermore, if care is taken to optimize the independent variables (HeartMath interventions) while optimizing control of any other variables, following which there is assessment and evaluation of changes associated with respective independent variables, classic experimental and control conditions are possible. HeartMath equipment can readily be combined with other, typical, psychophysiological information from equipment such as EEG, EMG, skin conductance, MRI, polysomnography etc. In conjunction with sleep studies, HeartMath technology can be used to provide objective indications for states and stages of consciousness variously described as gross, subtle, causal, non-dual, *turiya* and *turiyatita*. [1, 90].

Compared to many meditation traditions, HeartMath has a substantial, natural scientific evidence base, which provides empirical foundations, as well as various studies that assure replicability. Along with the Global Consciousness Project, the Global Coherence Initiative (GCI) has significant and meaningful future planetary health implications for all sentient beings [6, 48; 7, 1]. Although the Global Coherence app is freely downloadable from the internet and used on iPhone and

Android smartphones, users are only able to monitor their individual contributions to global coherence, and related planetary health and wellbeing if they own an Inner Balance Trainer, Lightning Pin Sensor, which costs about three thousand South African rands. Motivated persons who are genuinely committed, can still meditate for planetary peace and health reasons without the sensor. However, although various global health and religious organizations, regularly hold meditation and /or peace days, these still seem sadly lacking in total planetary organization. Past experience with such organizations has seemed to indicate that they were more orientated towards competition than collaboration. Much collaborative health work remains to be done, as in this conference and others like it.

HeartMath has been labeled as pseudoscientific in some traditional “hardcore” natural scientific circles. As with any concept and praxis, different interpretations will exist. Practices will be labeled as pseudoscience if they do not follow scientific processes as evaluated by the representative or acknowledged body of experts within that particular paradigm. However most fundamentalist natural scientists will readily accept criteria such as validity or reliability, in the case of quantitative data findings, or credibility and dependability in qualitative data findings, as well as integrative evidence of which is abundant in HeartMath studies by HeartMath employees as well as independent scientists. All of this conforms to basic natural, human and theologically orientated scientific paradigms, whose validity, reliability are repeatedly evaluated by a body of like-minded peers as well as supported in similar scientific studies by independent researchers. Certainly, much of the HeartMath system is based on established scientific foundations as propagated by such traditional luminaries



as Karl Popper, Thomas Kuhn and Karl Pribram. It is rather the areas of scientific and spiritual investigation, such as telepathy and psychokinesis that are questioned. These areas will inevitably be controversial as evidenced in well-publicized debates featuring protagonists of religion and atheism, such as those between Richard Dawkins and Deepak Chopra. Some can be wonderful, while others often seem to lead to endless, mindless, academic nitpicking. However, there is significant integrity of science practiced by such organizations as the Institute for Noetic Sciences (IONS), Global Consciousness Project (GCP) at Princeton University and Koestler Parapsychology Unit at Edenborough University.

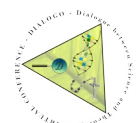
In general, concrete data and operationally defined behavior is readily studied scientifically as this can be measured. Scientific controversy centers on operational definitions of insubstantial spiritual events or theological phenomena, which are not readily measured or quantified. Most religions extol love, which is notoriously difficult to measure in transcendent or agape form. Subtle phenomena and levels of meditation create typical examples. This seems a main reason for pseudoscientific claims being directed against HeartMath. This will apply to any meditation method. Then there is the implicit assumption that coherence relates to what David Bohm has described as an implicate order. And yet from the meditation and healing perspective, the following relatively insubstantial phenomena are especially important – relaxation, sustained attention, focused intention, concentration, emotional awareness, insight and action. Particular healing mechanisms include beneficial human relationships, coherent communication, various heart-breath techniques, for example, mantras, precipitating factors, healing contexts and catalysts such as COVID-19. These

variables could all be further investigated, for example in deeper, more detailed, dialogical, scientific and theological versions of this pilot study. HeartMath is only one of many methods that could be used. Surely all well-intentioned, ethically sound meditation methods will help. The good, true and beautiful dimensions of all well-intentioned meditation practice typically transcend the rational, scientific, dimension of most scientific practices, just as most meditation is based on what is recognized as immanent Spirit. African Ubuntu is wonderful in its explication of the vertical-spiritual dimensions of authentic communal spirituality and spiritual community. So are similar Hindu, Buddhist, Jewish, Taoist, Christian, Islamic and other spiritual, wisdom, healing traditions.

V. CONCLUSION AND FUTURE IMPLICATIONS

The aim of this discursive presentation has been to introduce HeartMath as the coherent scientific approach to dialogue theological information. Specific emphasis has been on HeartMath meditation methods, emerging phenomena and related action. The theme of this contribution has been the ongoing dialogue between science and theology from an interfaith perspective. In this regard, for lighter reading, I highly recommend the book on Joy celebrating the Dharamsala meeting of Dalai Lama and Desmond Tutu. From an existential, HeartMath praxis perspective, joy is an extremely elated emotion inevitably contrasted with suffering, as in birthing a child [4, 6]. Cynthia Bourgeault's [1, 13] works on the imaginal world and Mary Magdalene also endorse the special healing of that divine woman who accompanied Christ in healing underworld suffering,

Finally, the special appeal of HeartMath, GCI, and GCP are their great potential



for monitoring and mobilizing future generational and planetary healing. The HeartMath Global Coherence Initiative supports and extends many perennial, diverse, local and global wisdom traditions, beliefs and practices [4, 9]. Various environmental research and public health studies support vast, energetic, interconnectivity at planetary and solar systemic levels. HeartMath research findings support much earlier evidence-based studies with regard to a propensity to facilitate optimal consciousness, particularly moral consciousness and behavior, creativity and health promotion [4, 2]. Consider the health effect of seven billion human hearts beating coherently. This implies promoting optimal moral integrity and ethical behavior to encourage and advance such contexts as love, peace and harmony as well as such related everyday relationship variables as empathy, respect and coherent communication.

ACKNOWLEDGEMENT

Many people have contributed in some way to this work. These include my extended family, Rollin McCraty, Tina Lindhard, Jabulani Thwala, Krynauw du Toit, Anthony Pillay, Martin Tiffelin, Elwyn Schenk and Carol Hermann.

BIBLIOGRAPHY

- [1] Bourgeault, Cynthia. *Eye of the heart, A spiritual journey into the imaginal realm*. Boston, MA: Shambhala, 2020. ISBN 97871611806526.
- [2] Childre, Doc. L., Martin, Howard., Rozman, Dorothy., & McCraty, Rollin. *Heart intelligence. Connecting with the intuitive guidance of the heart*. HeartMath, CA: Waterfront Press, 2016. ISBN 978-1-943625-43-7.
- [3] Edwards, Stephen, D. "Empirical and heuristic phenomenological case study of the HeartMath Global Coherence Initiative."

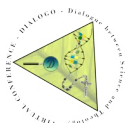
International Journal of Environmental Research and Public Health, 16 (2019), 1245; doi:10.3390/ijerph16071245.

- [4] Edwards, Stephen, D. & Edwards, David, J. "An empirical and experiential investigation into the contemplation of joy." *HTS Teologiese Studies/Theological Studies* 74(1) (2020), 4746. <https://doi.org/10.4102/hts.v74i1.4746>.
- [5] Edwards, Stephen, D. "Global coherence, healing meditations using HeartMath applications during COVID-19 lockdown." *HTS Teologiese Studies/Theological Studies*, 76(1) (2020). 157-158 DOI: 10.4102/hts.v76i1.6151.
- [6] McCraty, Rollin., Atkinson, Michael., Timofejeva, Inga., Joffe, Rosa., Vainoras, Alfonsas., Landauskas, Mantas., Alabdulgader, Abdullah.A., Ragulskis, Minvydas. "The influence of heart coherence on synchronization between human heart rate variability and geomagnetic activity." *Journal of Complexity in Health Sciences*, 1(2018), 42-48. <https://doi.org/10.21595/chs.2018.20480>.
- [7] Nelson, Roger. "Evoked potentials and GCP event data." *Journal of Scientific Exploration*, Preprint, (2020), doi: 10.13140/RG.2.2.17038.10565
- [8] Stanley, Ruth. "Types of prayer, heart rate variability and innate healing." *Zygon*, 44 (4) (2009), 1-10. <https://doi.org/10.1111/j.1467-9744.2009.01036.x>
- [9] Wilber, Ken. *Integral spirituality*. Boston, MA: Shambhala, 2007. ISBN 978-1-59030-527-0.
- [10] Wilber, Ken. *Integral meditation*. Boston, MA: Shambhala, 2016. ISBN 978-1061180-298-6.

BIOGRAPHY



Steve Edwards is currently an Emeritus Professor and Research Fellow at the University of Zululand. Qualifications include doctoral degrees in Psychology and Education



and registrations in South Africa and the United Kingdom as Clinical, Educational, Sport and Exercise Psychologist. Steve's research, teaching and professional activities are mainly concerned with health promotion. He has supervised many doctoral students, published much research, presented papers at many international conferences and served on boards of various national and international organizations. Academic and professional awards include USA Fulbright Scholarship, South African National Research Foundation ratings and Psychological Society of South Africa Mentoring and Development award. He is happily married with two children, and four grandchildren. His research record is available on internet at: https://www.researchgate.net/profile/Stephen_Edwards11

