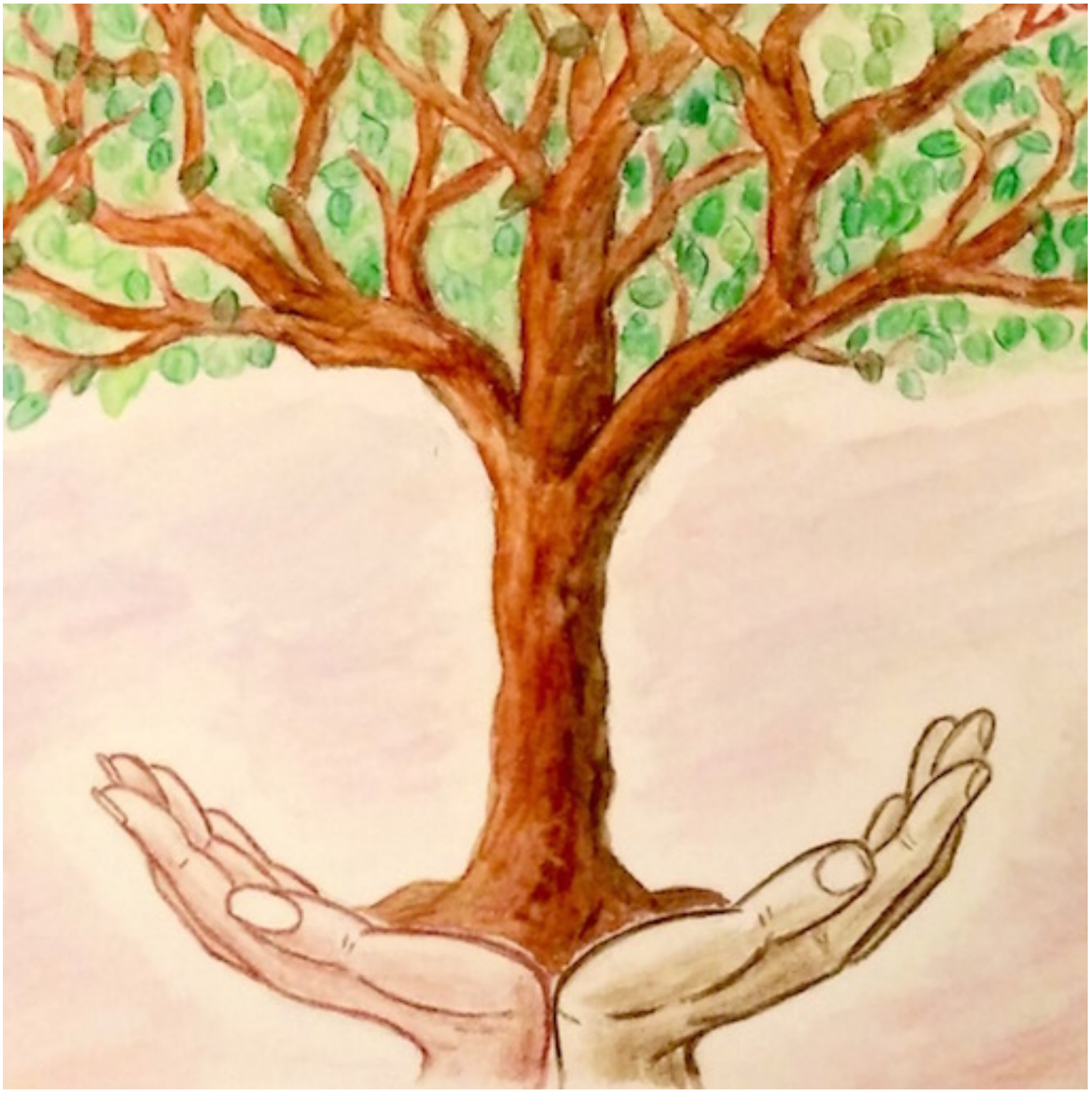
CONTEMPLATIVE SCIENTIFIC COLLABORATION

AN INVITATION



EXECUTIVE SUMMARY

In this paper, we present the ***Contemplative Scientific Collaboration*** project and invite scientists and contemplatives to co-create a *contemplative scientific collaboration* that can be actualized in *contemplative scientific communities* and might allow to transition together toward a *contemplative scientific culture*, in service of the well-being and co-evolution of all beings, all species, and a healthy, thriving planet. The paper is designed to be a "living document" to be collaboratively updated, to provide an interactive framework for a collaborative process, to spark co-creative exploration of novel ways to collaborate, and to recommend best practices of contemplative and scientific collaboration for individuals and groups.

The ***Contemplative Scientific Collaboration*** project regards science (with humanities on equal footing) and contemplation as two traditions of inquiry and practice that offer great potential for the further development and well-being of humanity and our ecosystem. It also recognizes the limitations and challenges that confront us – individually and collectively, in science and beyond. For example, our cultural conditioning gives rise to runaway competition for "scarce" resources and to a chronic felt sense of separation, even as our planet faces an unprecedented ecological crisis, which necessitates novel forms of collaboration and skillful practice.

This work proposes a collaborative exploration of – and a practical framework for – how we can harness available resources, such as experience and expertise in scientific collaboration (e.g. at CERN), contemplative practice, decision-making and community-building, in order to develop and refine such novel forms of collaboration together. Four main components that have thus far been identified as being conducive to manifesting a *contemplative scientific collaboration* were evaluated in light of each other: (1) tried-and-tested supporting **key factors** and **systemic principles**, (2) shared **values and intentions**, (3) skillful 'best' **practices and processes**, and (4) a perspective of **wholeness**. Finally, **possible roadmaps** for integration of these key insights, short-term applications and long-term future directions are proposed.

We invite all researchers, contemplatives, practitioners and other interested parties to share experiences, to establish an ongoing dialogue for deeper collaborative exploration, and to work together in the co-creation and co-evolution of this project over coming decades.

If you are interested, please join us at: https://www.contemplativecollaboration.org

This work is being supported by the Yoga Science Foundation.

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DOCUMENT STRUCTURE

Document version: 0.67

Creation date: Sunday, June 23, 2019

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(note: Achim's comments: add explanatory subtitles for the big chapters here in the TOC?)

INTRODUCTION

AUTHOR'S NOTE: ORIGINS, EVOLUTION, PURPOSE AND INTENTION OF THIS WORK

I was born in Graz, Austria on March 14, 1979, and became inspired by mathematics and science, as well as mythology and storytelling, from a very young age. During my teenage years I was drawn towards astrophysics (thanks to the late Stephen Hawking's classic "A brief history of time") and ended up studying Technical Physics at Graz University of Technology. During these years of study I was also engaged in independent filmmaking, as well as various online and offline community projects. I opened my heart-mind to the study-and-practice of Buddhism in the year 2005 and began to take retreats in the Vipassana and Zen traditions.

Following my master's degree in physics in 2009, I was blessed with the opportunity to work at CERN as a PhD student from 2010-2013. During my years at CERN, and the subsequent time to finish my PhD, I began to taste and appreciate the value of international cross-disciplinary collaboration of highly dedicated individuals and mutually interdependent teams, with a spirit and *culture of collaboration* that made the extremely challenging research possible. In 2012, at the peak of my efforts and enthusiasm, I nearly collapsed under the weight of my own expectations and exhaustion from having neglected my needs for pause. In the aftermath of this intense experience I realized the need for a change of my life path. My discovery of the field of Contemplative Science played a pivotal role in the transition that followed.

I owe the inspiration and encouragement to change gears from physics to the *Contemplative Collaboration* (CC) project to many fortunate encounters and friendships, including my former CERN colleague Yi Ling Hwong, as well as Scott Virden Anderson, director of the Yoga Science Foundation (YSF) that has been supporting my career development and transition for several years. I now pursue this project formally as an independent contractor for the Yoga Science Foundation, to bring this vision to life for the benefit of scientific communities, particularly that of Contemplative Science, and for the benefit of all sentient beings.

This project arises out of my life-long inquiry into the nature of life and experience, and the question how we as humans, collectively and individually, can realize our potential of science and humanity in harmonious co-existence with our environment. I have been turned onto this inquiry by many others who have pondered similar questions before and alongside me, and for everything that I am sharing here, I am greatly indebted to these teacher-students of life, upon whose shoulders I sometimes try to balance and who continue to inspire and inform me.

This work has thus been born from our collective being-human-in-the-world, and it intends to serve that collective nature, to be offered in the spirit of generosity and gratitude, and to be continually refined in the very spirit of collaboration that is being proposed here.

The CC project took formal shape in Spring 2015 during a silent meditation retreat. As I recalled the spirit of international scientific collaboration that I had experienced at CERN, I asked myself, *"How can the experience, expertise, and model of international scientific collaboration at CERN be merged with state-of-the-art research in the nascent interdisciplinary field of Contemplative Science, for mutual benefit as well as for the wider benefit of society, humanity, and all living beings?"*

It felt apparent to me that science overall, and Contemplative Science in particular, was *not* reaching its full potential: despite the ubiquitous wish among researchers to share resources and collaborate, I recognized a systemic lack of collaboration, with detrimental impact on the quality of research, methodological and intellectual rigor, attention to detail and contextual nuance, … and importantly the quality of life of researchers themselves. I interpreted the common underlying causes-and-conditions as a complex field of cultural, collective and individual world-views and habits based on separation, fragmentation, division, isolation, scarcity, and predominantly unwholesome forms of runaway competition for what *appeared* to be scarce resources. However, given my experiences at CERN, weren't other ways also possible, for the benefit of everyone involved and of the research itself?

Initially I placed my emphasis on **key factors** that would be essential for a *"CERN-inspired contemplative collaborative culture and research infrastructure for Contemplative Science"*, pondering in a reductionist way how to improve a *system* by changing its components. I soon extended the project's scope by embracing themes of organizational culture and development, collaborative decision-making, communication, and a wide range of **practices and processes** that can support collaboration. I then gradually shifted the emphasis towards practice, cultivation, development and refinement of skills and traits that help enable individuals and groups to participate and engage in collaborative structures and processes. Owing to my experiences with the Leap Forward community, I turned my attention to shared **values and intentions** that can support collaboration and community. The equal partnership of contemplation and science from a perspective of **wholeness** came to me mainly through my conversations with Scott Virden Anderson.

In the course of my own practice, I recognized the need to embody the essence of my proposal in my own life and work as the only way to authentically move forward. This lead to a series of rather unpleasantly challenging, yet invaluable experiences of reflection, realization and reconciliation. The only way to propose a way out of our *systemic* predicament was for me to recognize the very same issues as my *individual* predicament, and to genuinely put all my

heart's effort to the path of becoming whole again - not as an isolated entity in a "world of others", but in the very spirit of collaboration and community: to experience my own wholeness first, and to *learn how to collaborate* with others. It now becomes apparent to me that the path to intentional change of a *system* must lead - by systemic necessity! - through the very same kind of intentional change of *ourselves* as individuals and communities. This daunting task can be supported by an applied framework of guiding values, some of which we can find - as Contemplative Researchers - in the very same contemplative traditions that we study. And it requires the generous, ongoing support of our community itself.

Among the invaluable gifts that I have received on my journey were the numerous critical reflections and experiences that have shown me where and how I am struggling myself to embody and live up to the principles that I propose in this work; for this ongoing process I am particularly indebted to the Leap Forward community. It has allowed me to appreciate the enormous challenge that my proposal presents for us as individuals and groups. While its actualization may well be a project for several generations to come, I encourage myself and all of us to step up "in this very life" and seize every moment, in collaboration and community, to become, be, and "we" the change we wish to see in this world. I sincerely hope that this project and proposal, that you are reading now, offers a beneficial contribution to such a goal.

(note: condense this section to 2 pages?)

(note: Achim's comments: parts of acknowledgments are already here, better keep them apart and not mention persons here? Shorten paragraphs "I owe the inspiration …" and "This project arises …"? Rework "It felt apparent to me …" to transform critique/problem into vision and potential: to fully use available skills, knowledge, resources, … focus on what can be gained?)

THE VISION IN A NUTSHELL

WHO?

This document is primarily written for contemplative scientists – individuals who work in the interdisciplinary field of research called "Contemplative Science" – as well as those who may consider themselves not being part of that field, and who wish to reconcile in their own lives the "world" of scientific inquiry with that of contemplative practice. It is also written for you if you are genuinely interested in scientific collaboration and feel that it has yet to be realized.

WHAT?

This is a **living document**. As such, its purpose is to spark your **creativity** and support your **exploration** of „new" ways of collaboration, as you are invited to *interactively engage with* and *evolve* this document in ways that serve you.

If you enjoy creative playful inquiry, this document is for you.

HOW?

This document explores the possibilities of a **contemplative scientific collaboration** and its implementation in a **contemplative scientific community**. As such, its purpose is to help elucidate the *causes and conditions* and support the proposed **transition** from a scarcity-based, fragmented, self-serving, egotistical, overly competitive culture to an abundance-based, interdependent, whole-hearted, compassionate, *contemplative collaborative culture*.

If such a vision speaks to your heart and resonates deep within, this proposal is for you.

WHY?

This work recognizes that many of us are faced with „realities", structures, hierarchies, practices, habits, and ways that we **know** do not serve. Deep within we can **imagine and envision** a more beautiful world. We feel *heartbroken* about the state of affairs, the suffering, and the unwholesome directions that we are still taking – as a planet, as a species, as a humanity, as a culture, as an organization, as a tribe, as a family, as an individual.

If you share this inner knowing, vision, or heartbreak on any such level, this work is for you.

WHERE AND WHEN?

Here and now. Whenever you are ready. Are you ready?

WHAT IS OUR CURRENT SITUATION, AND WHY SHOULD WE STRIVE FOR CHANGE?

We can regard science and contemplation as two great traditions of inquiry and practice that humanity has developed. In our modern society and world, in this 21st century AD, science play as important role and offers great potential for our further development and well-being.

At the same time, science-as-a-whole suffers from fragmentation, silo mentality, runaway competition for apparently scarce resources, a publish-or-perish culture that optimizes for publication metrics and inadvertently promotes detrimental biases, hierarchical structures of status dominance infused with toxicity, privatization of research, agendas and funding decisions governed by oftentimes not science-savvy policy-makers, and – to say not the least – the disillusionment of scientists like you and me. All of this occurs even as humanity and our planet face an unprecedented ecological crisis that requires a „novel" form of collaboration (that is really just the „nature of nature" itself) extending even beyond the human species.

Above and beyond a possible technical „how-to" for „better collaboration", perhaps what is missing most in this picture is the lived experience and perspective of **wholeness** that we can find in our contemplative „wisdom" traditions and through our contemplative practice, that helps us cultivate qualities of the heart-mind (such as generosity, kindness, integrity, humility, …) that are conducive to such „new and ancient" forms of collaboration.

As these perspectives of wholeness and abundance, these contemplative „wisdom" traditions and practices, these heart-mind qualities and „ways of being" are not yet part of our scientific and academic environments, and are often excluded from such places, the work you find here is thus also an earnest attempt to create and cultivate a „safe environment" …

- for *scientists* who want to engage more deeply with contemplative practice,

- for *contemplatives* who want to engage with, serve and support scientific research,

- for *contemplatives-and-scientists* who want to live in both „worlds" at the same time.

The larger purpose and aim of this project is to co-create a *contemplative scientific collaboration*, instantiate it in *contemplative scientific communities*, and transition together to a *contemplative scientific culture*, in service of the well-being and co-evolution of all beings, all species, and a healthy, thriving planet that we call our „home" (and perhaps beyond).

In summary, this proposal is designed and intended to follow a threefold purpose:

1. to explore how a *contemplative scientific collaboration* may be actualized, using the best of our currently available collaborative, contemplative, scientific, and community-building *practices*, in an as integrated and holistic manner as possible - and *beginning with ourselves first*;

2. to stimulate inclusive conversation about this proposal and to collaboratively refine it further, while applying the proposed methods, practices and principles in this very process; and, if the proposal is deemed beneficial by sufficient consensus in the field,

3. to strategically and patiently move towards gradual implementation in due time, such that the proposed *contemplative scientific collaboration* may indeed become actualized in *contemplative scientific communities* while serving each individual, the community, and the greater whole.

WHY AND HOW CAN CONTEMPLATIVE SCIENCE LEAD THE WAY?

By the very nature of its field of inquiry, Contemplative Science can potentially embrace the union of contemplative practice and scientific practice into a *contemplative-and-scientific way of life* that is informed by and informs our contemplative and scientific practice simultaneously.

How can we move this interdisciplinary academic field from the current „scientific study of contemplative traditions and practices“ to a union of „a contemplative way of engaging in the scientific life AND a scientific way of engaging in contemplative life“? Can and should this novel kind of union subsequently be extended to other realms of scientific inquiry? And what might be the role of “true” collaboration and community in this transition?

These questions lie at the heart of this proposal, which aims to spark creative ideas, offer support for the heartfelt intentions and resonating aspirations of its readers, and propose practical suggestions for gradually actualizing such a transition together.

QUESTIONS AND INVITATION

„What would a *contemplative scientific collaboration*, community, and culture be like for me?“

„What would my life experience be in a committed contemplative, rigorously scientific, intentionally collaborative, compassionate community of dedicated researchers-and-practitioners?“

„…“

„…“

„…“

If these questions resonate with you, we invite you to join us as a “contemplative scientific collaborator” in the co-creative refinement of this document, and/or in the **Contemplative Collaboration** project to envision suitable pathways for its actualization.

SUGGESTIONS FOR HOW TO UTILIZE THIS DOCUMENT

While this document is entirely yours to utilize in any way that you find useful, here are a few suggestions that you may want to consider – suggestions that have also helped me shape and evolve this document to its present state:

1. This is a *living document*. Feel free to **update it** in any way that serves you.

2. Feel free to **expand** the lists and categories, draw and scribble in the blank areas, insert extra pages, rearrange the sections, …

3. The main categories have no particular order, you can read or apply them as you wish. However, in order to further evolve this work, you may find it useful to **evaluate** these categories (and any additional ones) *in the light of each other:*

   I. values and intentions

   II. practices and processes

   III. key factors and systemic principles

   IV. pathways of wholeness

   V.

   VI.

4. Walk the walk and be the change: embody and **practice** what you find in this document, while you're working with it.

5. Work with whatever speaks to your **heart**, here and now. Place it somewhere in sight or around you, and *let it work with you*. Put the rest aside – its time may come later, or never.

6. The purpose and aim of this document is not to be exhaustive, nor to be „right". It can be a tool for your exploration, a reminder for what lives inside us, and an encouragement to **ask** and *live the questions*.

COLLABORATION, COMMUNITY, CULTURE AND LIFE

(How) can we co-create a *contemplative scientific collaboration, community and culture …*

… aligned with tried-and-tested supporting **key factors** and **systemic principles,**

… grounded in shared **values and intentions,**

… nurtured by skillful „best“ **practices and processes,**

… based on a shared recognition of **wholeness**, as pathways of / in service of **wholeness,**

… integrating available **experience and expertise** in scientific collaboration, contemplative practices, and community-building?

GUIDING QUESTIONS

These questions are not carved in stone. Feel free to ask and add your own relevant questions.

1. Which **key factors** and **systemic principles** can enable and support successful scientific collaboration? Can we make lasting collaborative efforts to „increase“ and **share** available resources, to **transition** from *scarcity*-based overdrive competition to *abundance*-based collaboration and „coopetition“ *in service of the whole*?

2. Which shared **values and intentions** would inform, guide and support a *contemplative scientific collaboration and* community? How can we **support** each other to live and work in accordance with our agreed-upon shared values and intentions? Can we consistently **show up** for ourselves and for each other to 'be the change'?

3. Which **practices and processes** can enable and support successful scientific collaboration? What skillful „best practices“ can we **cultivate** on individual, collective and systemic levels? How might our *engagement* in such practices inform, support and **enhance** our collaboration? Can our collaborative process itself become part of our practice?

4. How can science and contemplative practice become joined **pathways of wholeness** in our lives? How can we as scientists **engage** in a genuine *contemplative life*, as we engage in our *scientific practice*, here and now? What is our most fundamental aspiration for being contemplative scientists? Can we **pause** and inquire: what serves the highest good here?

5. What **experience and expertise** in scientific collaboration, contemplative practices, and community-building is available to us today? How can we **harness** our *collective* key insights, **integrate** them, and **build upon** them?

COLLABORATION

Some thoughts and sentiments that may have come up for you …

„I would love to collaborate more with my peers. Can't we share our data?“

„I would love to be more connected to my peers, and to people outside of my discipline.“

„I would love to spend less time and energy writing grant proposals, and focus more on my passion as a researcher.“

„I would love to take more time for diligence in my research, to sit with the questions, …“

„I would love to perform studies with larger cohorts to achieve better statistics.“

„I would love to have easier access to funding / resources / expertise / critical feedback / publications / materials and equipment / …“

…

Further questions to ponder:

How can a *contemplative scientific collaboration* serve us and the greater whole?

What can a *contemplative scientific collaboration* be like?

How can we merge our contemplative and scientific practice into a true collaboration?

How can we make our scientific collaboration also contemplative?

How can we make our contemplative collaboration also scientific?

CONTEMPLATIVE COLLABORATION

…

(Sangha, monasteries, groups of practitioners attempting to deepen their practice and understanding by exchanging and sharing freely their experiences and insights, and by practicing together; …)

Which scientific methods, insights, … can support us in our contemplative collaboration?

SCIENTIFIC COLLABORATION

We can draw upon various examples of successful scientific collaboration. One of the most prominent contemporary examples is CERN, the European Laboratory for Particle Physics, with its research around the LHC (Large Hadron Collider) and other experiments. The two largest collaborations at the LHC, named the ATLAS Collaboration and CMS Collaboration, together span more than 7,000 researchers – mostly physicists, computer scientists and engineers – from around 200 institutions in more than 40 countries. Without such a concerted collaborative effort, CERN's ambitious research goals and high-precision results (including the famous „discovery" of the Higgs Boson that was first hypothesized more than 50 years ago, and publicly announced in July 2012) could not be attained.

There is indeed much that can be learned about the collaborative culture at CERN (that is sometimes called the „CERN model of collaboration" [1]), its history, causes and conditions. The book „Collisions and Collaboration" provides an excellent resource to look more deeply into one of CERN's largest experiments.[2] Various studies are underway in order to better understand the collaborative and epistemic „structures of scientific research groups and their impact on the efficiency of scientific knowledge acquisition", including communities of Particle Physics research at CERN.[3]

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[1] https://cds.cern.ch/journal/CERNBulletin/2015/43/News%20Articles/2058811?ln=en

[2] Max Boisot et al., *„Collisions and Collaboration: The Organization of Learning in the ATLAS Experiment at the LHC"*. Oxford University Press (2011).

[3] OPTIMIST – Optimization Methods in Science and Technology, http://www.ruhr-uni-bochum.de/optimist-survey/

However, not all scientific collaborations are beyond criticism even in their own scientific community, such as the prestigious Human Brain Project,[4] which was initially criticized for its „undemocratic leadership structures“. These structures were subsequently transformed, including a significantly enlarged governing board.

Another potential issue with scientific collaboration may be found in a unification of views and a „paradigmatic hegemony“, such as found in material reductionism.

(TODO: elaborate carefully and in a heartfelt way, not from the head!) *(Plurality of views … make reference to clinging to views, views as heuristic. Systemic issue: large collaborations with sufficient funding are currently a rare luxury, depend on lobbying the policy-makers. What else is missing: human psychology, interaction, communication, conflict exploration, decision-making, … some tools and methods are available; what can contemplative practices contribute here, particularly on the „individual“ level?)*

“When things get … reduced to a number, the things you cannot reduce to a number are left out. … When we quantify things, they fit into a society that is built on measurement and quantification, and ultimately the conversion of all things to the number called ‘value’.“ — Charles Eisenstein (“Under The Skin” podcast ep.50 hosted by Russell Brand) ***TODO: move to more appropriate section “issues in contemporary science and academia”, with privatization etc.?)***

Which contemplative methods, insights, … can support us in our scientific collaboration?

CONTEMPLATIVE-AND-SCIENTIFIC COLLABORATION

…

(an outlook of what such a collaboration could look like, and why it has not yet been realized; references to the relevant sections: values and intentions, practices and processes, …)

(note: Achim suggests: make comparison Table: contemplative collaboration / scientific collaboration / contemplative scientific collaboration (also for other “community” and “culture”?))

[4] https://www.humanbrainproject.eu/

COMMUNITY

Some thoughts and sentiments that may have come up for you …

„I would love to be more connected to my peers, and to people outside of my discipline."

„I would love to have easier access to funding / resources / expertise / critical feedback / publications / materials and equipment / …"

„I would love to bring all of myself to my lab / work environment, and be seen and heard."

…

Further questions to ponder:

„How can a *contemplative scientific community* serve us and the greater whole?"

„How can we manifest (instantiate) a *contemplative scientific collaboration* in one or several *contemplative scientific communities*?"

„How can we cultivate our contemplative and scientific practice in true community?"

„How can we make our scientific community also contemplative?"

„How can we make our contemplative community also scientific?"

(see „communities of practice")

We are already living in community (planetary, cultural, scientific, contemplative, …) - how can we show up for it, and support each other to show up for it? (and what does it mean?)

CONTEMPLATIVE COMMUNITY

Why do we need a contemplative community, a Sangha, a group of practitioners, etc.?

…

In „The Buddha's Teachings on Social and Communal Harmony", Bhihhku Bodhi writes that *„high spiritual ideals"* were *„not sufficient to ensure harmony"* in the Buddha's contemplative community. The Buddha also established monastic guidelines and rules *„that would restrain if not totally obliterate divisive tendencies"* in the Sangha. Even so, the flourishing of a community is not merely a matter of skillfully curated regulations; it can only emerge from its members' sincere individual intentions for personal transformation:

> "A PEACEFUL AND HARMONIOUS SOCIETY **CANNOT BE IMPOSED** FROM THE OUTSIDE BY THE DECREES OF A POWERFUL AUTHORITY BUT CAN ONLY EMERGE WHEN PEOPLE RECTIFY THEIR MINDS AND ADOPT WORTHY **STANDARDS OF CONDUCT**. THUS THE TASK OF PROMOTING COMMUNAL HARMONY MUST BEGIN WITH **PERSONAL TRANSFORMATION**. PERSONAL TRANSFORMATION OCCURS THROUGH A **PROCESS OF TRAINING** THAT INVOLVES BOTH OUTWARD DISPLAYS OF GOOD CONDUCT AND INNER PURIFICATION."

— Bhikkhu Bodhi, *„The Buddha's Teachings on Social and Communal Harmony"* (2016)

How can we make our contemplative community also scientific?

What might be our skillful means that are sufficient to bring a collaborative *contemplative scientific community* to life? What are its necessary causes and conditions? Can we find a universal framework and language, independent of cultural biases, that gives us a general guidance for this transition?

…

SCIENTIFIC COMMUNITY

… (describe the current state of affairs in the scientific community, its potential and system-inherent difficulties, and what is missing from the picture)

How can we make our scientific community also contemplative?

…

CONTEMPLATIVE-AND-SCIENTIFIC COMMUNITY

…

How can we cultivate our contemplative and scientific practice in true community?

…

CULTURE AND LIFE

Some thoughts and sentiments that may have come up for you …

„I would love to integrate my spiritual / contemplative practice into my research and my life as a scientist."

„I would love to integrate my scientific practice and knowledge into my life as a spiritual / contemplative practitioner."

…

Further questions to ponder:

„How can a *contemplative scientific life* serve us and the greater whole?"

„How can we live a *contemplative scientific life,* grounded in a *contemplative scientific collaboration,* instantiated in *contemplative scientific communities*?"

„How can we cultivate our contemplative and scientific life in true community?"

„How can we make our scientific life also contemplative?"

„How can we make our contemplative life also scientific?"

(see „communities of practice")

CONTEMPLATIVE LIFE / VITA CONTEMPLATIVA

…

How can we make our contemplative life also scientific?

(note: add link to Jeff Genung's contemplativelife.org – ask Jeff for feedback / collaboration?)

(note: also refer to CMind website and work)

…

SCIENTIFIC LIFE / VITA SCIENTIFICA

…

How can we make our scientific life also contemplative?

…

CONTEMPLATIVE-AND-SCIENTIFIC LIFE (AS A PATHWAY OF WHOLENESS)

…

How can we cultivate our contemplative and scientific life in true community?

…

In its simplest form, living a *contemplative-and-scientific life* could mean to be a well-trained, dedicated, practicing scientist and yogi "at the same time". In practice, however, this often means that we split ourselves into being a scientist in the lab and a yogi on the cushion.

What does it mean for us, and what does it ask of us, to transform this "mutually exclusive" way of being to a proper "both-and" simultaneity, and further into a "full unity" or wholeness?

I. KEY FACTORS

Which **key factors** and **systemic principles** can enable and support successful scientific collaboration? Can we make lasting collaborative efforts to increase and **share** available resources, to **transition** from *scarcity*-based overdrive competition to *abundance*-based collaboration and „coopetition“ *in service of the whole?*

KEY FACTORS AND SYSTEMIC PRINCIPLES

These key factors and systemic principles may be particularly useful for a *contemplative scientific collaboration:*

1. Shared resources
2. Robust research
3. Collaborative co-authorship
4. Slow science
5. Consensual languages
6. Flagship projects
7. Consensual decision-making and participatory processes
8. Compassionate governance and organizational structure
9. Diversity and pluralism, curiosity and humility
10. The time (and space) things take

1. SHARED RESOURCES

„WE ARE ALWAYS WORKING AT THE LIMIT OF AVAILABLE SKILLS AND RESOURCES; THERE IS NO SLACK IN THE SYSTEM ... TO **SOLVE** THE UNFORESEEN PROBLEMS THAT CROP UP ON A DAILY BASIS AND MAKE PROGRESS WE NEED TO **ASK** NON-TEAM MEMBERS TO CHIP IN, **INTEGRATING** THEM INTO OUR TEAMS AND **SHARING** WITH THEM WHAT WE HAVE."

— M. Boisot, M. Nordberg, S. Yami, B. Nicquevert, *Collisions and Collaboration: The Organization of Learning in the ATLAS Experiment at the LHC* (2011), page 67

In the case of CERN, the ambitious research goals *can only be achieved* with a high degree of collaboration and sharing of resources, data, expertise, and manpower. This internal commitment is also reflected by how CERN interacts with the public, including an open data and open access policy. A prominent historic example of CERN's commitment to sharing resources is the invention, development and distribution of the World Wide Web.

Can a similar *culture of sharing* be established in a *contemplative scientific collaboration*?

...

In terms of shared values, this principle supports and is supported by:

Integrity (allowing for peer-review), caring (...), generosity, kindness, trust, humility (not assuming one already has the right answers or can solve problems alone), not-knowing, respect, integrated cooperation, inclusivity, co-creativity. ***(TODO: add hyperlinks)***

...

The long-standing practice in physics to publish pre-prints (arXiv) has lately been adopted by various other fields, including Contemplative Science (MindRxiv).

2. ROBUST RESEARCH

In the wake of the recently debated „replicability crisis“, and owing to the work of the Open Science Foundation (OSF), a number of initiatives have been birthed to improve the quality of scientific research, including pre-registration of studies.

In the case of CERN, robust internal peer-review processes prior to publication help safeguard a high quality of published results. These processes draw in the expertise of all colleagues inside the collaboration, and safeguard that the experimental design as well as the data analysis have been conducted with due diligence and rigor.

Furthermore, in particle physics any „discovery“, such as that of a particle sharing the properties of the predicted Higgs boson (announced in July 2012), requires a statistical significance of 5σ or 99.99996% to minimize the possibilities of such observations being merely due to statistical effects. This conservative approach safeguards high replicability of results, which are further corroborated via studies performed by “competing” collaborations within CERN. A great deal of effort is invested in the diligent assessment of statistical and systematic uncertainties – the latter category typically being the dominant contribution.

Can a *contemplative scientific collaboration* adopt similarly diligent processes and rigorous quality standards?

To what extent can the inclusion of “*context-dependent systematic uncertainties*” (and biases) mitigate effects that might be co-responsible for the recently debated replicability crisis?

Can replications of studies be elevated to equal esteem and importance as “original” findings (e.g. by reducing the reliance on publication metrics)?

…

In terms of shared values, this principle supports and is supported by:

Integrity, authenticity, diligence, skillful listening and communicating, caring, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, equanimity, co-creativity.

3. COLLABORATIVE CO-AUTHORSHIP

„IT IS AMAZING WHAT YOU CAN ACCOMPLISH IF YOU DO NOT CARE WHO GETS THE CREDIT."

— Harry S. Truman

When first-author publications in prestigious journals are a scarce and precious resource that scientists must compete for, it is likely that the field shifts from genuine collaboration towards more competitiveness, while individual decisions and collective research agendas become biased towards optimizing for publication metrics. ***(TODO: add ideas from Cliff @ Todi)***

In a quite contrary manner, the ATLAS Collaboration at CERN encompasses around 3,000 collaborators with equal co-authorship status (and likewise for other collaborations at CERN). This means that every journal publication is co-authored by the entire ATLAS Collaboration. Individual contributions are thus mostly invisible to the outside world, while being well recognized within the collaboration. This presents an uncommon (and sometimes critiqued) situation with regard to the world of publishing in academic science.

On the other hand, the power of scientific collaboration at CERN can hardly be disputed, given the successful experimental studies and high-quality publications that would not be possible at all in a more fragmented, less collegial landscape.

How can a *contemplative scientific collaboration* embrace best practices from such a kind of collaborative culture?

To what extent do we have to challenge our beliefs and change our mindsets & practices about authorship, contribution, metrics, credit, etc.?

…

In terms of shared values, this principle supports and is supported by:

Integrity, diligence, generosity, kindness, trust, humility, not-knowing, integrated cooperation, inclusivity, equanimity, co-creativity.

4. SLOW SCIENCE

In our highly competitive scientific culture, tireless work and fast-track publication become more feasible than slow research and deep inquiry – a commitment to quality over quantity –, not to mention the researchers' benefits of sometimes taking a slower pace altogether.

By contrast, slow science arises at CERN *by necessity*, in order to safeguard a high degree of scientific rigor. This is achieved by intense internal peer-review processes prior to journal submission, detailed guidelines e.g. for style and formatting of presented data, as well as formal scientific requirements for high-precision results. In the case of the ATLAS Collaboration, the average rate of journal publications (~100 per year) compared to the number of co-authors yields less than 0.05 journal publications per person per year.

However, the working pace of these individuals and groups is by no means slow – unforeseen challenges arise on a daily basis, and new solutions must be found without delay, in order to meet the ambitious scientific goals of the collaboration. In this sense, their work deserves to be regarded as *fast-paced* at the same time.

Can we do slow science also *deliberately*, as a form of contemplative practice in itself?

How can a *contemplative scientific collaboration* implement specific guidelines for slow science, while also being able to „measure" its effects on researchers, research, and those affected by the research? What are these guidelines?

…

In terms of shared values, this principle supports and is supported by:

Integrity, diligence, skillful listening and communicating, compassionate and caring engagement, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, presence, awareness, equanimity, co-creativity, co-evolution.

5. CONSENSUAL LANGUAGES

„WHAT DISTINGUISHES THE LANGUAGE OF SCIENCE FROM LANGUAGE AS WE ORDINARILY UNDERSTAND THE WORD? HOW IS IT THAT **SCIENTIFIC LANGUAGE** IS INTERNATIONAL? WHAT SCIENCE STRIVES FOR IS AN UTMOST ACUTENESS AND **CLARITY OF CONCEPTS** AS REGARDS THEIR MUTUAL RELATION AND THEIR CORRESPONDENCE TO SENSORY DATA."

— Albert Einstein, *The Common Language of Science* (1941)

We oftentimes find ourselves tripping over different definitions for the same terms, or we use different terms for the same phenomena, oftentimes without being aware of it; and thus we run into misunderstandings that make our communication more difficult. This becomes all the more acute for interdisciplinary research, or under cultural differences, when we face the additional challenge of diversity of somewhat antagonist perspectives.

A more benign situation can be observed in the realms of physical and mathematical sciences. Physics uses mathematics as a formal language to formalize research questions, evaluate approaches, facilitate consensus, and achieve precision results. This well-defined language, with its internal structure and relations, safeguards a high degree of internal consistency within the domain of physics.

Can we find equivalent languages for other domains of science, and especially for a *contemplative scientific collaboration*? What might such languages be like?

…

In terms of shared values, this principle supports and is supported by:

Integrity, diligence, skillful listening and communicating, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, awareness, equanimity, co-creativity, co-evolution

6. FLAGSHIP PROJECTS

A common „flagship project“ that reflects the values and ambitions of a collaboration internally and to the „outside world“ can serve as a focal point of interest and a kind of social glue. (However, solitary large-scale projects can also present a „single point of failure“ unless their findings can be independently replicated.) Besides a material token (or *totem*), this role can also be performed by a common „flagship question“ that appeals to the researchers' shared sense of *epistemophilia,* or love for knowledge and understanding.

Physical “flagships”, such as the accelerator complex at CERN (hosting the LHC as well as the ATLAS, CMS, and other large experimental devices also called „particle detectors“), facilitate a shared sense of purpose. The shared excitement of doing cutting-edge physics research, aimed at fundamental breakthrough discoveries at the very limits of science and technology, unites vast numbers of colleagues to collaborate on their projects.

What could be such flagship projects for a *contemplative scientific collaboration?*

What could be such flagship *questions* for a *contemplative scientific collaboration?*

How can a suitable trade-off between a unification of collaborative efforts and a plurality of research initiatives be maintained?

…

In terms of shared values, this principle supports and is supported by:

Integrity, diligence, skillful listening and communicating, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, co-creativity

7. CONSENSUAL DECISION-MAKING AND PARTICIPATORY PROCESSES

… (describe benefits of consensual and participative processes in collaborations: example = ATLAS collaboration board, rotating leadership roles for sub-groups, etc.; very little of the potential has already been realized in science; mention OIS center, citizen science, etc.; recommend SK, AoH)

In terms of shared values, this principle supports and is supported by:

Integrity, authenticity, diligence, skillful listening and communicating, compassionate and caring engagement, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, presence, awareness, equanimity, co-creativity, co-evolution

(note: all of the currently listed values!)

8. COMPASSIONATE GOVERNANCE AND ORGANIZATIONAL STRUCTURE

… (describe benefits of participative and more compassionate forms of governance and organization, e.g. Sociocracy, Council, AoH, SK; very little of the potential has already been realized in science)

In terms of shared values, this principle supports and is supported by:

Integrity, authenticity, diligence, skillful listening and communicating, compassionate and caring engagement, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, presence, awareness, equanimity, co-creativity, co-evolution

(note: all of the currently listed values!)

9. DIVERSITY AND PLURALISM, CURIOSITY AND HUMILITY

… (describe benefits (and challenges!) of diversity and pluralism of views (in particular not-clinging to views); perhaps a little remark about pre/…/post/meta-modernism; very little of the potential has already been realized in science)

How can we create a "safe" space where individuals and groups can simply communicate with one another, even if they have antagonistic views – even celebrating these differences? Indeed, isn't this precisely what Science needs?

In terms of shared values, this principle supports and is supported by:

Integrity, authenticity, diligence, skillful listening and communicating, compassionate and caring engagement, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, presence, awareness, equanimity, co-creativity, co-evolution

(note: all of the currently listed values!)

10. THE TIME (AND SPACE) THINGS TAKE

…

(note: bring in the concept of "cultivation", going back to the ascent of agriculture; contemplative practice, cultivation of skills, training, slow processes revealing the "spaces in between", …; an antidote to impatience and thirst for progress/growth/accumulation/results; "time sickness"; everything takes time, except wholeness itself!)

In terms of shared values, this principle supports and is supported by:

…

SYSTEMIC TRANSITIONS AND RECONTEXTUALIZATIONS

The following systemic and epistemic transitions ("move from a to b") and recontextualizations ("include both a and b") may be particularly relevant for the actualization of a *contemplative scientific collaboration* within a *contemplative scientific community:*

Transitions:

11. (Not) clinging to views: from „knowing" to curiosity and humility

12. From closed/static/linear to open/dynamic/non-linear systems

13. From scarcity to abundance

14. From a felt-sense of fragmentation to wholeness (inherent inseparability)

15. From separation to interdependence

16. From selfish egotism to generosity, caring and compassion

17. From hierarchy to holarchy: leadership in service of the whole / the highest good

Recontextualizations:

18. From (only) zero-sum to non-zero-sum games

19. From runaway competition to collaborative coopetition

20. Scale independence: ego-, ethno-, world-, cosmo-centric

11. (NOT) CLINGING TO VIEWS: FROM „KNOWING“ TO CURIOSITY AND HUMILITY

If science is fundamentally based on taking and sharing views (assumptions, hypotheses, axioms, lines of reasoning, inferences, conclusions, etc.), we may think that it matters how such views are held by us: as a heuristic for „doing science“, to be collaboratively examined, falsified and updated; or as a truth, to be claimed and defended, marketed, monetized, invested in? The answer may seem obvious here and now, but how do we truly respond in our moment-to-moment experience when our cherished views are being challenged?

One of our “wisdom traditions” that offers a clear response is Buddhism. In the *Atthakavagga* (The Chapter of Octads/Eights) of the *Suttanipata*, part of the *Pali Canon*, that some scholars believe may contain the earliest teachings of the historical Buddha,[5] we find passages about the dangers of “clinging to views” in the *Culavihuya Sutta* and in the *Mahavihuya Sutta* (“The Smaller (Greater) Discourse on Deployment” or “The Lesser (Greater) Array”, respectively):

“THEY SAY THEIR OWN TEACHING IS PERFECT
WHILE THE DOCTRINE OF OTHERS IS LOWLY.
THUS QUARRELING, THEY DISPUTE, EACH
SAYING HIS AGREED-ON OPINION IS TRUE.
(...) IF THEIR WORSHIP OF THEIR TEACHING
WERE TRUE, IN LINE WITH THE WAY THEY
PRAISE THEIR OWN PATH, THEN ALL
DOCTRINES WOULD BE TRUE –
FOR PURITY’S THEIRS, ACCORDING TO EACH.”

— from Sn 4:13, translation by Thanissaro Bhikkhu

“THEORIZING **CONJECTURES** WITH REGARD TO
VIEWS, THEY SPEAK OF A PAIR: TRUE & FALSE.
DEPENDENT ON WHAT’S SEEN, HEARD, &
SENSED, DEPENDENT ON HABITS & PRACTICES,

[5] see e.g. Gil Fronsdal, *The Buddha before Buddhism*, 2016 (Shambhala)

ONE SHOWS DISDAIN [FOR OTHERS].
TAKING A STANCE ON HIS DECISIONS,
PRAISING HIMSELF, HE SAYS, 'MY
OPPONENT'S A FOOL & UNSKILLED.'
THAT BY WHICH HE REGARDS HIS OPPONENTS
AS FOOLS IS THAT BY WHICH HE SAYS HE IS
SKILLED.
CALLING HIMSELF SKILLED, HE DESPISES
ANOTHER WHO SPEAKS THE SAME WAY.
AGREEING ON **A VIEW GONE OUT OF**
BOUNDS, DRUNK WITH CONCEIT, IMAGINING
HIMSELF PERFECT, HE HAS CONSECRATED,
WITH HIS OWN MIND, HIMSELF AS WELL AS
HIS VIEW."

— from Sn 4:12, translation by Thanissaro Bhikkhu

(note: compare other sources: Bhikkhu Bodhi, "The Suttanipata" (Wisdom Publications); Gil Fronsdal, "The Buddha before Buddhism"; perspectives of Thomas Kuhn, Karin Knorr-Cetina, Francisco Varela?)

These ancient passages, though coming from a very different cultural and historical context and with all the challenges of translation and hermeneutics, hold great significance for our modern times - especially for the realm of science and academia. The Buddha speaks of *"a view gone out of bounds"* and its holder being *"drunk with conceit, imagining himself perfect"*. These drastic descriptions point us to "clinging to views" as a form of *epistemic hubris*. We do not have to look far to discover such tendencies in our immediate environments, and perhaps all we really need to do is look into the mirror.

On the flip-side lies the possibility of a culture in which every individual and group engages in an ongoing practice of *epistemic humility*. What might such a culture look like for us, and what are the practices that might help us get there?

"Let us pretend that …",

"In the following, we are going to hold the view / assumption that …", etc.

Can we dwell in a state of "beginner's mind", where we do not fall into identification with an "expert" role, and release our desire to "know"; where we transform our "understanding" not into a self-righteous stance of "overstanding", but into renewed humility before the mystery of what we do not know and perhaps cannot know; where we remain in curious inquiry, hold the question, and follow our passion of *epistemophilia* with a playful sense of humility?

Can we as teachers be ready to become students at any time and vice versa - actual expertise and skill notwithstanding? Can this become part and parcel of our lifelong practice?

In terms of shared values, this principle supports and is supported by:

Integrity, authenticity, diligence, skillful listening and communicating, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, presence, awareness, equanimity, co-creativity, co-evolution

12. FROM CLOSED/STATIC/LINEAR TO OPEN/ DYNAMIC/NON-LINEAR SYSTEMS

Whereas in nature no such thing as a *closed, static, linear system* exists, our innate tendency to simplify and abstract nature's *open, dynamic, non-linear systems* to the above categories has been essential for extraction of patterns, the discovery of structures and relations, etc., and thus for the success of science and technology. However, these simplifying abstractions come with their own limitations, and we are now observing a transition towards thinking in terms of open, dynamic, non-linear, complex, "chaotic" systems, from molecular biology to climate science. ***(note: add examples and references) (note: basic systems theory)***

If we take a step out, what does such a recognition ask of us in practice?

Can we move from linear "single-cause, single-effect" thinking towards an appreciation of the complexity of nature and life – an interdependent web of causes and conditions – and learn to ask with curiosity and humility: what else might have co-created this, and what else might be caused by that?

Can we treat ourselves and each other with such curiosity and humility?

What individual and shared practices can support us in this epistemic/systemic transition?

How does this affect our scientific practice and life, in collaboration and community?

13. FROM SCARCITY TO ABUNDANCE

Coming from an understanding of the world as being fragmented into closed, independent systems, we may tend to focus on our felt need to gain a sufficient share in apparently scarce resources – such as money, materials, recognition, fame, expertise, manpower. The *"publish-or-perish"* culture and runaway competitiveness may be among the most tangible symptoms in science that co-arise from such a *scarcity-based mindset*, in which even collaboration becomes merely a strategy to favor one's in-group in this exhausting "arms race" for scarce resources.

If everyone in the scientific community agrees upon, adopts, and plays by such rules, the result is an enormous overhead in competing for such resources – some of which become even rarer commodities, given the energy, time and money that must be spent to sustain participation in such a game.

From a perspective of wholeness, and with its associated values (such as generosity, trust, compassion, humility, integrated cooperation, inclusivity, equanimity, co-creativity and co-evolution), a gradual shift to an *abundance-based mindset* arises, and "new" possibilities for collaboration come to the fore.

How can a skillfully orchestrated *contemplative scientific collaboration* support – and be supported by – such a paradigmatic shift towards wholeness and abundance, by cultivating the necessary values and supporting practices in community?

What does this ask of us a scientists?

What can we release, and what can we gain, from embracing such a transition?

(note: sharing, gift economy)

14. FROM A FELT-SENSE OF FRAGMENTATION TO WHOLENESS (INHERENT INSEPARABILITY)

As scientists we may daringly approach the notion of "wholeness" on the grounds of systemic thinking. Such analytical attempts to reconcile experientially fragmented "parts" into a greater "whole" may differ from the experiential, contemplative path of *familiarizing oneself with wholeness* by assuming it, abiding in it, and practicing (living) in accordance with it. Some contemplative traditions advise their practitioners to presuppose "wholeness" and to deepen their understanding of it by diligent practice as an ongoing process of discovery.[6]

What kinds of (contemplative?) practices can help us as scientists to *"familiarize ourselves with wholeness* by assuming it, abiding in it, and practicing (living) in accordance with it"?

Under which conditions and to what extent can this be regarded as "good scientific practice"?

What are the possible consequences of such a transition on our contemplative and scientific practice in collaboration and community?

…

To begin with, we can *consciously choose to adopt a stance* that presupposes "wholeness" as an underlying foundation from which "partness" arises. Beginning from that vantage point of "wholeness" (as a *practice/process* rather than a noun), we can meet our habitual felt-sense of fragmentation and "partness" heads-on, and recognize in our direct experience that the world operates by interdependently co-arising, co-conditioning, ever-changing phenomena that are inherently inseparable. Such recognition can be facilitated while being immersed in nature, or by engaging in contemplative practices, when we may be struck with an inner "knowing" or *intuition* of an underlying wholeness, in which the barriers of conceptual thought become transparent or even disappear entirely for a while. The commonality of such *peak experiences* (a term coined by Abraham Maslow) across all traditions and cultures – largely independent of their specific metaphysical assumptions – suggests a common cause inherent in the nature of human experience.

---

[6] Terry Patten gives a comprehensive illustration of 'wholeness' in Part One of his recent book *"A New Republic of the Heart"* (2018), specifically in Chapter 3, *"Wholeness and Fragmentation"* (pp.65-84). He makes the point that "wholeness", while being a noun, is better understood as a *process*, and envisions that we might some day learn to think "*from* the whole *to* the parts".

This experiential path can bring certain features of our experience to the fore with increasing clarity: e.g. the ever-changing process-nature and mutually interdependent co-conditionality of all phenomena; and specifically in the case of Buddhist philosophy-and-practice, their nature of not-self (*anatta*) or emptiness (*sunyata*) that, upon realization, shatters the belief in the intrinsic existence of any conditioned phenomena, including the notion of "self".

…

The term "inseparability" does not imply that it is impossible to make separating distinctions; rather, it points to an "underlying nature of wholeness", by emphasizing that the *parts* of our conceptual experience ultimately cannot be completely separated from the larger *whole*. Thus, "inherent inseparability"[7] acknowledges our ability to conceptually and experientially separate and distinguish entities from one another, while also recognizing the inherent limitations in our nervous systems' activities of processing and abstracting information from our senses.

As we can become consciously and meta-cognitively aware of these processes of abstraction, we can learn to not habitually confuse the different levels of abstraction and not to reify our abstractions. The popularized phrase, "The map is not the territory", can thus be read as: our conceptual "maps" are necessarily incomplete, while our "territory" is an undivided whole.

(note: this section needs tidying up, and references to supporting values and practices)

[7] I understand and use the term "inherent inseparability", that I have first heard from Scott Virden Anderson, synonymously with "wholeness", "interdependence" and "interbeing". In my understanding, the term "interbeing" has been coined by the Vietnamese activist and Buddhist teacher Thich Nhat Hanh.

15. FROM SEPARATION TO INTERDEPENDENCE

… *(note: might be merged with the previous section)*

16. FROM SELFISH EGOTISM TO GENEROSITY, CARING AND COMPASSION

…

17. FROM HIERARCHY TO HOLARCHY: LEADERSHIP IN SERVICE OF THE WHOLE

(note: link to Servant Leadership) (note: Arthur Koestler / holons, Ken Wilber … describe hierarchy as a human-made imposition, holarchy as found in the natural world; even dominance in the animal kingdom may be more holarchic than hierarchic; what does the recognition of wholeness ask of us here?)

…

If we use our power in the service of *empowering* our fellow beings, we collaborate to bring out the best (and thus increase well-being) in ourselves, each other, and the whole system.

In terms of organizational structure, this can be supported by Sociocracy.

In terms of leadership/governance, this can be supported by Servant Leadership.

In terms of communication, this can be supported by Council and Bohm Dialogue.

In terms of voting/decision-making, this can be supported by Systemic Konsensing.

In terms of knowledge transfer and co-creativity, this can be supported by Art of Hosting.

In terms of contemplative practice, this can be supported by meditating on the „Four Immeasurables“ (*brahma-viharas*).

18. FROM (ONLY) ZERO-SUM TO NON-ZERO-SUM GAMES

…

(note: basic game theory) (note: "Nonzero" by Robert Wright has concise summary of game theory at the end; useful for understanding co-opetition: nonzero- and zero-sum-games are usually happening at the same time!)

19. FROM COMPETITION TO COLLABORATIVE CO-OPETITION

Collaboration and competition need not be opposites, they can embrace and transcend each other. What appears to us as 'competition' on one level of complexity can reveal higher-order 'collaboration' on another level. In service of what do we compete and collaborate? Can we do it in full alignment with our values and intentions, in service of the greater good?

Can we collaborate in service of more skillful competition, and compete in service of more skillful collaboration (a kind of *„co-opetition"* [8]), to cultivate the fruits of the higher good – well-being for all beings and on all systemic levels, well-being of the whole?

This ambition then comes down to refining our capacity to live in full accordance with our values and intentions, in service of "realizing" (making real) that greater good - by engaging in skillful practices etc. and by living with/in wholeness. These practices are means and not the "end goal" (like a raft to cross a river - see references in Buddhism); yet the means and end are also not-two; both are fundamentally in/of wholeness!

(note: add Adam Kahane's "stretch collaboration"?)

[8] Max Boisot et al. (2011), *Collisions and Collaboration: The Organization of Learning in the ATLAS Experiment at the LHC*, Oxford University Press, page 98. The term "co-opetiton" can be traced back to A. Brandenburger and B. Nalebuff (1996), *Co-opetition*, New York: Doubleday.

20. SCALE INDEPENDENCE: EGO-, ETHNO-, WORLD-, COSMO-CENTRIC

… (note: might include some of Ken Wilber's / Terry Patten's integral work here) (note: fractals, counterculture memes - ask Scott again or watch recording) (note: see Susanne Cook Greuter, and look up others who have coined these categories - Scott: Susanne coined these terms in her research?)

SOURCES: COLLABORATIONS, SYSTEMS, AND NATURE

From what sources can such „key factors and systemic principles“ be drawn?

- Science: CERN, ESA, …
- Organizations: Google? Snapchat? Buurtzorg? …
- Communities: Sangha, … (spiritual communities)
- Systems thinking / theory
- Nature, biomimicry
- Philosophy and ethics (including Buddhism and other „wisdom traditions“)

II. VALUES AND INTENTIONS

Which shared **values and intentions** would inform, guide and support a *contemplative scientific collaboration* and community? How can we **support** each other to live and work in accordance with our agreed-upon shared values and intentions? Can we consistently **show up** for ourselves and for each other to 'be the change'?

What are shared values and intentions that can inform, guide and support us in community?

Here we are *proposing* (rather than *prescribing*) a set of values that are aligned with the key factors and systemic principles in the previous section, and which are serving to support our collective evolution toward a more collaborative community and culture. This value-set can be augmented and adapted with shared values emerging from individual values that each participant brings to the table.

We also propose to carefully distinguish between *authentic values* (serving the well-being of the individual, the group, and the greater whole or "highest good"; serving our co-evolution) and *protective values* (serving to protect egoic needs, immature habitual patterns, or psychological wounds; serving to maintain the status quo). This exploration can be supported by skillful practices and processes, such as (… TODO add list).

The following list has been extracted and synthesized from various sources, including those given in this section.

SHARED VALUES

1. Integrity, authenticity, and diligence
2. Skillful listening and communicating
3. Compassionate and caring engagement
4. Pre-emptive generosity, kindness, and trust

5. Humility, not-knowing, respect, and patience
6. Integrated cooperation, inclusivity, and perspective-taking
7. Presence, awareness, and equanimity
8. Co-creativity and co-evolution
9.
10.
11.

1. INTEGRITY, AUTHENTICITY, DILIGENCE

(ethical conduct with regard to self and other)

Integrity and Commitment: what we often call „overcommitment“ (in terms of time/energy) is actually an „undercommitment“ in terms of integrity and caring (and other values). Can we support each other to make conscious choices of our commitments without pressure, and earn trust by living up to these commitments?

…

2. SKILLFUL LISTENING AND COMMUNICATING

…

3. COMPASSIONATE AND CARING ENGAGEMENT

…

4. PRE-EMPTIVE GENEROSITY, KINDNESS, TRUST

…

5. HUMILITY, NOT-KNOWING, RESPECT, PATIENCE

(epistemic, ontological, intellectual, …)

"I WOULD RATHER KNOW WHAT IS GOING ON, THAN 'BE RIGHT'."

— John Kuchiya (during the *"Materials, Complication and Assemblage"* workshop in Toronto, Canada, June 2018)

"NO MAN – PRINCE, PEASANT, POPE, – HAS ALL THE LIGHT, WHO SAYS ELSE IS A MOUNTEBANK. I CLAIM NO PRIVATE LIEN ON TRUTH, ONLY A LIBERTY TO SEEK IT, PROVE IT IN DEBATE, AND TO BE WRONG A THOUSAND TIMES TO REACH A SINGLE RIGHTNESS."

— Morris Langlo West, *The Heretic* (1968)

…

6. INTEGRATED COOPERATION, INCLUSIVITY, PERSPECTIVE-TAKING

…

7. PRESENCE, AWARENESS, EQUANIMITY

…

TODO: A clearly discerning and non-judgmental stance - attentional space - mindfulness - …

8. CO-CREATIVITY AND CO-EVOLUTION

…

SHARED INTENTIONS AND ASPIRATIONS

9. Reducing suffering and increasing well-being for all sentient beings

10. Awakening and liberation for all sentient beings

11. A healthy, resilient, adaptive, flourishing planet and ecosystem on all levels

INDIVIDUAL INTENTIONS AND ASPIRATIONS

12. …

SOURCES: CERN AND OTHERS

CODE OF CONDUCT (CERN)

CERN, the European Organization for Nuclear Research, has issued a "Code of Conduct" for all its employees and collaborators *"as part of (...) global reflection on CERN values and common standards of behavior"* that has been developed in *"an extensive collaboration and consultation process during 2009 and 2010"*.[9] Centered around five core values, this policy aims *"to enhance transparency, objectivity and clarity, to prepare ourselves for increased public scrutiny and to address recurrent issues in a positive and preventive manner."* These five core values are:

1. **Integrity** - behaving ethically, within intellectual honesty and being accountable for one's actions

2. **Commitment** - demonstrating a high level of motivation and dedication to the organization

3. **Professionalism** - producing a high level of results within resource and time constraints and fostering mutual understanding

4. **Creativity** - being at the forefront of one's professional field, furthering innovation and organizational development

5. **Diversity** - appreciating differences, fostering equality, and promoting collaboration

A supplementary document about "religious practice in the workplace" states that *"CERN respects the freedom of thought, conscience and religion"*, while prioritizing the fulfillment of its mission, operations, safety and security. Religious practice is considered *"a private matter"*.[10]

(note: By contrast, a *contemplative scientific collaboration* respects and welcomes any form of religious and/or spiritual practice in the workplace as *essential* to fulfill its mission, while maintaining the highest possible rigor and quality of scientific research.) ***(note: "any form" needs a bit of clarification!)***

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[9] https://hr-dep.web.cern.ch/content/code-of-conduct

[10] Supplementary information on the Code of Conduct (December 2017)

CONTEMPLATIVE COMMUNITY TOOLKIT (CENTER FOR CONTEMPLATIVE MIND IN SOCIETY)

In the Center for Contemplative Mind in Society's "Contemplative Community in Higher Education: A Toolkit" (version 2.16.18), the authors list the following *"Core Values/Qualities Associated with Contemplative Practice"*:

1. **Patience** (acceptance, commitment, sustainability)
2. **Wisdom** (understanding, perspective-taking, clarity of thought)
3. **Honest self-reflection**
4. **Calmness** (grounding, centeredness, a sense of ease of being, equanimity)
5. **Integrity** in the midst of complex situations
6. **Compassion** (sensitivity, care, wholesome attitudes and intentions)
7. **Focus** (lucid, attentive awareness, presence)
8. **Skillful listening and communicating**
9. **Creativity**

The authors of this toolkit ask: *"How open will you be to feedback if there is dissonance between espoused values and actual behavior/ actions? What mechanisms will you have for inviting feedback and becoming aware of places of resonance and dissonance?"* [11] This points to a need for skillful group practices for communication and decision-making. In particular, processes that „make the invisible visible" can serve well in such situations, e.g. Council/Circle and Bohm Dialogue.

[11] http://www.contemplativemind.org/files/Toolkit021618web.pdf

CORE ORGANIZATIONAL VALUES (NETWORK FOR GRATEFUL LIVING)

The Network for Grateful Living's website (October 17, 2018) states that *"Our Core Organizational Values guide every aspect of our work, and are expressed and advanced through the practice of Grateful Living, which:*

1. Reveals that **everyone belongs** and **everyone is valued**
2. Generates an experience of **oneness** and **interconnectedness**
3. Deepens **love, compassion**, and **respect** for all life
4. Cultivates a sense of **sufficiency** and **abundance**
5. Awakens **kindness** and **generosity**
6. Inspires the impulse to **serve with humility**
7. Contributes to the **healing of body, mind, and spirit**
8. Unleashes **joy**
9. Anchors **hope** and **trust** in life, especially in challenging times
10. Opens us to **growth** and **opportunity**
11. Offers pathways from conflict to **peace**
12. Is an engaged **YES to a wholehearted life**." [12]

…

…

[12] https://gratefulness.org/about/values-mission-vision/

III. PRACTICES AND PROCESSES

Which **practices and processes** can enable and support successful scientific collaboration? What skillful „best practices“ can we **cultivate** on individual, collective and systemic levels? How might our *engagement* in such practices inform, support and **enhance** our collaboration? Can our collaborative process itself become part of our practice?

What skillful „best practices“ can we cultivate for a contemplative scientific collaboration?

VALUES-ALIGNED PRACTICES

(see „values and intentions“)

1. Integrity, authenticity, and diligence

We can practice integrity, authenticity, and diligence towards ourselves: e.g. by aligning our thoughts, words and actions with our values and intentions as an inner compass (with a stance of curiosity, rather than judgment), ethical conduct, diligent practice in everyday life, authentic reflections in journaling, …

What does that look like in the context of a scientific collaboration?

Ethical conduct in science: we commit to a high level of rigor (integrity + caring + trust + …)

2. Skillful listening and communicating

We can practice skillful listening and communicating towards ourselves: e.g. by reflection times in which we allow ourselves to listen to what lives inside us and what our genuine needs are, creative expression, artwork, authentic reflections in journaling, reading inspiring texts that enhance our capacity to be aware, …

3. Compassionate and caring engagement

We can practice compassionate and caring engagement towards ourselves: e.g. by caring for our bodily and mental well-being, healthy nutrition, taking time to prepare meals and to eat mindfully at a proper time, pauses during work, connecting with nature, …

4. Pre-emptive generosity, kindness, and trust

We can practice generosity, kindness and trust towards ourselves: e.g. by being generous with time and space, giving ourselves time for contemplation and reflection; cultivating gratefulness; connecting with nature; …

5. Humility, not-knowing, respect, and patience

… (epistemic, intellectual, …)

6. Integrated cooperation, inclusivity, and perspective-taking

We can practice integrated cooperation, inclusivity, and perspective-taking within ourselves: e.g. by becoming aware of our manifold interests, potentials, skills, roles, relationships, personae, histories, etc., and finding practices to integrate them in creative ways: such as practices derived from Gestalt therapy, constellation work, improvisation techniques, …

One can also apply Systemic Konsensing for personal creativity and decision-making, as a tangible way of practicing integrated cooperation, inclusivity, and perspective-taking.

7. Presence, awareness, and equanimity

We can practice and cultivate presence, awareness, and equanimity towards and within ourselves, simply by ongoing contemplative practice, both formally and “off the cushion”.

8. Co-creativity and co-evolution

…

INDIVIDUAL PRACTICES

…

Working with „humility, not-knowing, respect, and patience:“

Inventory of not-knowing:
Make your personal inventory of what you *don’t know* about something, what you *feel* to be incomplete, and the *ways* in which your knowledge is incomplete (this can well include your inventory itself). Then use your „gut feeling“ to prioritize where to turn your attention next. What can serve your inquiry? Can you share your not-knowing openly? Can you ask peers for help? Can you invite interdisciplinary exploration to get new perspectives? …

RELATIONAL PRACTICES

…

SYSTEMIC PRACTICES

…

COMMUNITIES OF PRACTICE

A contemplative scientific community of practice …

PARTICIPATORY LEADERSHIP AND COMPASSIONATE GOVERNANCE

Successful collaboration can be supported by a suitable organizational structure. Pyramidal-hierarchical structures support a command-and-control paradigm with strong leadership in the hands of a few individuals and a usually larger body of supporting actors following orders. Scientific collaboration, on the other hand, thrives on the free mutual exchange of knowledge between relatively equal peers, where trust is established by making contributions to the common goals. While this ideal is (alas) not usually realized in today's academic institutions (and most of society), it might be possible especially for contemplative scientific communities to intentionally shift further into this direction. For example, in the ATLAS collaboration at CERN, a hierarchical organizational structure is being implemented mainly for the purpose of efficient workflow and knowledge transfer between groups and more specialized sub-groups, and less for the purpose of acquiring a higher status within the organization; it can therefore be described as a flat hierarchy, where ideas and initiatives are recognized regardless of the "status" of the person introducing them (e.g. new PhD student or senior expert). Leadership positions are usually temporary and subject to vote by committees, with nominations being invited from all collaboration members, where the nominated candidates have acquired merit in the collaboration - thus resembling to some extent a "meritocracy" (for details, see the book "Collisions and Collaboration" by M. Boisot, M. Nordberg et al).

„WHEN YOU REALIZE THAT EVERY LIVING SYSTEM, INCLUDING COMMUNITY, IS CREATIVE, THEN LEADERSHIP BECOMES THE **FACILITATION OF CREATIVITY**, IT BECOMES THE SKILL OF PREPARING AN ENVIRONMENT IN WHICH CREATIVITY IS MAXIMIZED."

— Fritjof Capra (in a Webinar with Steven Bingler: "Architecture as a Community Practice")

SOCIOCRACY

Executive Summary: *Sociocracy presents a collaborative-participative dynamic governance model based on nested-circle structures and consensus-based group decisions.*

Sociocracy is a system of organizational structure and dynamic governance based on nested circles (each circle fulfilling certain functions depending on the organization's needs) that are double-linked to each other by each circle electing one representative for each other circle. While the circles themselves can have a hierarchical relationship between each other, it is imperative that within a circle decisions are made on principles of equality and consensus. Each circle elects a facilitator by nominations and consensus vote, who subsequently guides the communication processes (e.g. new policy decisions, elections for roles, ...) following predefined structures and protocols. All votes typically follow the consensus principle. All participants of a circle have equal opportunity to be heard by the group and to veto proposals before decisions are made. The framework of predefined generalized processes may present guidance as well as a challenge to groups and organizations with specific needs that may not be readily captured by these generalizations.

The Sociocratic model can benefit groups, organizations and initiatives with a collaborative impulse. It may become even more effective when being applied in a contemplative context, due to the possibility of heightened metacognitive awareness during the process itself (as well as individual & group insights possibly being derived from deeper reflections). While it can help improve the quality of participation in organizational and decision-making processes, it does require education about the method, as well as skills in process facilitation. Challenges that may potentially arise from the consensus rule (blocked decisions, illusion of unanimity, …) can possibly be mitigated by a combination with principles from Systemic Konsensing.

SERVANT LEADERSHIP

Principles of "servant leadership" have appeared over history in the Tao Te Ching, in ancient India, and in the early Christian tradition. In its modern form, the principle was coined by Robert K. Greenleaf in his 1970 essay, *"The Servant As Leader"*. It describes an **ethical long-term** approach to leadership, based on *continuously cultivated and applied* moral characteristics of behavior. Greenleaf proposed to gauge the refinement of these moral characteristics in what he called the "best test":

> „THE DIFFERENCE MANIFESTS ITSELF IN THE CARE TAKEN BY THE SERVANT FIRST TO MAKE SURE THAT OTHER PEOPLE'S HIGHEST PRIORITY NEEDS ARE BEING SERVED. THE BEST TEST, AND THE MOST DIFFICULT TO ADMINISTER, IS

THIS: **DO THOSE SERVED GROW AS PERSONS?** DO THEY, WHILE BEING SERVED, BECOME HEALTHIER, WISER, FREER, MORE AUTONOMOUS, MORE LIKELY THEMSELVES TO BECOME SERVANTS? AND, **WHAT IS THE EFFECT ON THE LEAST PRIVILEGED IN SOCIETY?** WILL THEY BENEFIT OR AT LEAST NOT BE FURTHER DEPRIVED?"

— Robert K. Greenleaf, *The Servant As Leader* (1970)

Larry Spears distilled *"Ten Characteristics of the Servant-Leader"* from Greenleaf's work: listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of people, building community.[13]

Greenleaf's works, *The Leadership Crisis: A Message for College and University Faculty* (1978) and *Teacher as Servant: A Parable* (1979), as well as other contemporary resources [14] [15] might serve the application in academic and scientific communities. Further parallels to James Scouller's *"Three Levels of Leadership"* model (2011) can be drawn, which gives rise to an *"Integrated Psychological theory of leadership"*. When regarded as a participative leadership style, Servant Leadership can support the application of participative ideation, problem-solving, and decision-making (see other sections).

[13] Larry Spears (1998), *Ten Characteristics of the Servant-Leader*, pp. 3-6.

[14] Aaron Noland and Keith Richards (2015), *Servant Teaching: An exploration of teacher servant leadership on student outcomes*, Journal of the Scholarship of Teaching and Learning, 15(6), 16-38. doi: 10.14434/josotl.v15i6.13928

[15] J. Martin Hays (2008), *Teacher As Servant: Applications of Greenleaf's Servant Leadership in Higher Education*, Journal of Global Business Issues, 2(1), 113-134.

CONSENSUAL DECISION-MAKING

When we need to make a group decision, do we automatically apply the familiar, simple and effective „democratic“ method of the majority vote? Can we recall our triumphant feelings of „winning“ such votes? Can we also recall times when this method has left us feeling utterly frustrated and left behind, when we found ourselves among the „losers“?

Indeed, this method contains serious inherent flaws (as described by voting theory) ***(TODO: add links to resources)***, including strategic voting (e.g. “no favorite betrayal”) and the “independence of irrelevant alternatives” that might hamper creativity in a solution-finding process prior to the decision-making process. Among alternative voting systems, the simple “approval voting” (voters can select any number of candidates) and the more refined “range voting” or “score voting” (voters can give each candidate a score) appear to be more robust.

However, even these more robust voting systems are still susceptible to polarization by establishing a “winner-loser” dichotomy that creates tension between the “winners” who have shown preference to the selected outcome, and the “losers” who have given little or no approval to it. For the „losers“, the short-term outcome can be frustration, turning into bitterness, even sabotage and revolt. In the context of Buddhist terminology, such voting systems can thus be regarded as *engines for greed, hatred, and delusion*. When viewed through the systemic lens of the part-whole relationship, and through the lens of contemplative practices and principles, it becomes apparent that any voting system with a propensity to create or increase such fragmentation should be abandoned for a better alternative.

In some alternative methods and practices, groups systemically converge towards temporary consensus that can be renegotiated at any time. Such methods allow the system to reveal to its participant members which needs and resources are present in the system, and harness individual creativity and group intelligence to reveal emergent solutions. In these systems, the arising of dissent becomes an opportunity for creative exploration, ideation and solution-finding, while the decision-making process itself then leads the whole group reliably towards consent.

SYSTEMIC KONSENSING

The method of **Systemic Konsensing** (German: "Systemisches Konsensieren“, SK) presents a simple, collaborative, co-creative process leading to consensus-based group decisions. It addresses two fundamental flaws of the majority vote: (1) the choice backed by the relatively largest share of votes is not necessarily the choice with the highest overall approval and/or

lowest resistance (this effect is exacerbated further by the possibility of strategic voting); (2) the underlying "win-lose" narrative with its resulting disregard of the minority's needs opens the door for dissatisfaction, unrest, as well as open/covert resistance to - and even sabotage of - the chosen option or trajectory. The SK method resembles „score voting", yet it measures the *resistance to* (instead of the *approval of*) available options. A healthy, respectful decision is regarded to be one with minimal residual resistance. The SK method embeds this principle into a simple (optionally iterative) process that encourages creativity and naturally converges towards consensual solutions with minimal residual dissatisfaction. By embracing the entire dynamic range between consent and dissent, the SK method transforms the "threatening potential" of dissent into a source of creativity that allows to discover entirely new, formerly "invisible" solutions to a given problem.

The SK method can thus be highly beneficial for any collaborative undertaking in science (and society). It benefits further from individuals' contemplative practice and/or in a contemplative context, as well as individuals' skills and experiences with Council, Sociocracy, NVC, mediation, etc, and can support transitions of organizational structure.

The SK method works best when guided by an experienced moderator, and in situations with moderate conflict potential - it might not succeed in strongly polarized bipartisan conflicts. Nonetheless, it can be included in the standard repertoire of any collaborative undertaking, regardless of discipline, for co-creative and group decision-making processes.

…

In terms of shared values, this method supports and is supported by:

Integrity, authenticity, skillful listening and communicating, compassionate and caring engagement, generosity, kindness, trust, humility, not-knowing, respect, patience, integrated cooperation, inclusivity, perspective-taking, presence, awareness, equanimity, co-creativity

…

note: voicing dissent as essential to avoid systemic biases, groupthink, "illusion of unanimity" - e.g. Welch Cline, Rebecca J (1990). "Detecting groupthink: Methods for observing the illusion of unanimity". *Communication Quarterly*. **38** (2): 112–126. doi:10.1080/01463379009369748

CONSCIOUS NONVIOLENT COMMUNICATION

COUNCIL / CIRCLE

Executive Summary: *Council presents a process of deep communication, based on a circular structure, that promotes authentic sharing and supports community-building and conflict exploration/transformation.*

Council goes back to the ancient practice of "storytelling while sitting in a circle around a campfire". It usually involves a talking piece (to promote mindful speaking and mindful listening), a center, a bell or other sound-making instrument (to invite a silent pause). In a circle, all participants are meeting as equals even in the background presence of power structures, which play no role during the process of Council. Some variants of this practice have been incorporated into professional contexts or have inspired other practices ("World Café", "Open Space Technology", "Fish Bowl", … - see "Art of Hosting"). It can be effective for building community, discovering a shared purpose, finding consensus, or settling disputes.

A particularly important element is called "witnessing": during Council or before closing the circle, a brief reflection of what has been heard (or learned) can bring a powerful integration to the process. In the context of "Art of Hosting", this step is also called "(Art of) Harvesting".

One of the defining characteristics of Council is that of being a process that "works with the invisible" and/or "makes the invisible visible", which can include underlying tension as well as untapped creative potential. As participants submit themselves to the process, the Circle itself emerges as a system (also called "field") that may follow its own rules (or "wisdom") and takes the group to where it needs to go: whatever comes up "is meant to come up", even if it is outside of the "agenda" of the group and its process facilitators. The main focus is on direct experience, not on expected outcome. With deepening experience in the process of Council, practitioners can develop the skill of "reading the field" to intuit what kinds of intervention or sharing may or may not serve the whole group at any given point.

In circle settings, participants can find themselves settling into specific roles, with the effect that others are relieved of the "need to fill" that same role - thus the entire system tends to self-organize into a differentiated whole that reveals its own state. Individual shares can build upon each other until a "group story" emerges, often revealing unexpected insights. This "cumulative" effect stands in stark contrast to the dynamics of common forms of debate (that can serve a different purpose). The simple and powerful method of Council benefits from regular practice and can also be applied in dyads.

BOHM DIALOGUE

In a Bohm Dialogue (coined by late theoretical physicist David Bohm), the difference between 'dialogue' and 'discussion' becomes tangible. In its light, most of our conversations are actually discussions (debates), with selective listening, arguments and counterarguments, etc.

Bohm Dialogue emphasizes another form of communication based on deep listening, as well as deep sharing: a person only speaks when moved to do so by the body, and never in direct 'response' to what another has shared; every other person listens without reactivity or judgment. This is somewhat similar to the "Council" practice.

One aspect that distinguishes a Bohm Dialogue from common discussions is that it is not outcome-oriented. There might be a theme or topic of interest for the group to start with, but the process can lead the group into any other direction, and even a session in full silence is possible. What might seem at first to be an unstructured and 'random' way of communication actually proves to be highly structured: a Bohm Dialogue reveals (explicates) "what is underneath the surface" (implicate), and can elicit great depth in sharing. It also invites a highly refined degree of attention to oneself, others, the group, and "that something-else which is between us",[16] or what would be called the "field" in Council.

According to David Bohm, the ideal group size should be 20-60 and the duration should be at least 90 minutes for each session, possibly with several sessions over a couple of days. Meanwhile, other variations of Dialogue have been created with different recommendations.

(note: add specific recommendations as to where and when such a powerful & delicate process might be warranted, e.g. community-building, elicitation of "invisible" tensions, creativity, …)

NONVIOLENT COMMUNICATION (NVC)

… (Marshall Rosenberg)

also: … *(check sources sent by Sky Nelson)*

…

[16] see Vasu Reddy's talk @ ESRI 2017

HOSTING CONFERENCES AND CONVERSATIONS

ART OF HOSTING

Art of Hosting encompasses a set of participatory practices such as Circle / Council, World Café, Open Space, the "Chaordic Process", collective sense-making through storytelling, … and applies them in various professional contexts.

(note: complete this section)

…

also: Banathy Method / Gordon Dyer, IFSR conferences

also: Q&A methods from ESRI 2017 & 2018

…

FROM THE MACRO TO THE MICRO

Our efforts to live in accordance with our shared values and intentions, and to cultivate skillful practices and principles, can only bear fruit if we pay close attention in our everyday moment-to-moment experience. Every moment is an opportunity to pause, listen, reflect, stretch, re-align, re-commit, … we can do this on our own, with each other, and within our larger systems and organizations. In this way we bring our values and intentions to life, both in the macro (as a guiding compass) and in the micro (as moments of lived experience).

This is the heart of our spiritual or contemplative practice, as much as it is the heart of our scientific practice. In this way there is no distinction between „on and off the cushion/mat“, or „inside and outside the lab/office“, etc.; we can formally separate these domains, while we can honor their inherent inseparability, and bring our full humanity to every such realm.

IV. PATHWAYS OF WHOLENESS

How can science and contemplative practice become joined **pathways of wholeness** in our lives? How can we as scientists **engage** in a genuine *contemplative life*, as we engage in our *scientific practice*, here and now? What is our most fundamental aspiration for being contemplative scientists? Can we **pause** and inquire: what serves the highest good here?

How can we as scientists engage in a genuine *contemplative life*, here and now?

SCIENTISTS AS CONTEMPLATIVES (AND VICE VERSA)

How can we as scientists engage in a genuine *contemplative life*, here and now?

SCIENCE IN THE LIGHT OF WHOLENESS

…

(note: add from mobile notes - compare paticca-samuppada / dependent co-arising with approach here: beginning with wholeness / "ignorance" (habitual and systemic neglect) of wholeness, giving rise to several mutually interdependent, co-conditioned, co-conditioning components (such as the ones in this work) that together may help lead back to wholeness)

A NEW CONTEMPLATIVE-AND-SCIENTIFIC CULTURE

…

V. POSSIBLE ROADMAPS

What **experience and expertise** in scientific collaboration, contemplative practices, and community-building is available to us today? How can we **harness** our *collective* key insights, **integrate** them, and **build upon** them, to co-create a *contemplative scientific collaboration* and actualize it in a *contemplative scientific community?*

Roadmaps for the many paths ahead …

At this point, three main threads have emerged that may facilitate the gradual realization of a *Contemplative Scientific Collaboration, Communiy and Culture* – ideally to be explored and implemented in a coordinated manner: (1) research, (2) education, (3) service/practice. ***(TODO: expand)***

…

WALKING THE WALK: EMBODYING THE VISION IN EVERY STEP

Form a perspective of wholeness, can we already „be the change" and embody everything that we put forth as „skillful" and „desirable", even as we are engaging in the development of visions, the sharing of ideas, the crafting of proposals, the formulation of plans, … and along every step of implementation, even allowing for decisions of non-implementation?

Can our "roadmap" be grounded in a firm intention rather than a fixed "plan", to bring our shared values and aspirations to life in an emergent "natural" way?

This „living document" has been gestated, crafted, examined, incubated, revised, … with an intention of being in alignment with its proposed values and intentions, practices and processes, key factors and systemic principles, and perspectives of wholeness. That ongoing process reveals the challenges of "walking the walk" – in particular, the author's significant difficulty of opening up the process to actual collaboration; what sounds easy and agreeable on paper may prove tremendously "difficult" in practice! Ironically, the only way to overcome

this challenge is by opening up to collaboration – to take a "leap of faith" in the collaborative process itself, and trust emergence.

…

THE LOW-HANGING FRUIT: „EASY" NEXT STEPS

Steps that can be taken with a low "entry barrier", to prepare and begin a transition towards a *contemplative scientific collaboration*, community, culture and life, include:

DIALOGUES

Engage in dialogues: … (including: CERN virtual visits, workshops, …)

Foster the implementation of participatory practices and processes at seminars, workshops, and conferences in the field, in which the collaborative spirit can be lived, explored, and shared with peers …

Bring embodied practices and creative arts to conferences to awaken and embrace the whole of our humanity – not just to "consume" creative performances, but also to co-create them and to participate actively in them.

Walk the talk – lead by example – at every academic gathering, reduce our environmental footprint as much as possible: food, transportation, minimal waste, shift to local and "semi-virtual conferences" which reduce travel costs and socio-economic barriers to participation [17], …

PRACTICES

Introduce practices: …

NARRATIVES

[17] see e.g. the conference format proposed by Prof. Richard Parncutt @ University of Graz

Work with stories / change the narrative: …

FUNDING

Following the ongoing trend of funding agencies towards more collaborative projects and studies (e.g. EU: ERC Synergy Grants, COST action, …), we may find opportunities to collaborate on proposals for more collaborative research … ***(TODO reformulate and expand)***

Draw inspiration from the example of CERN: can we reach a stage in which various member states from all over the world contribute to a large and well-orchestrated *contemplative scientific collaboration* by providing funding resources? ***(TODO: expand what this looks like in CERN's case in a bit more detail)***

Budget: In contrast to CERN, we may expect the total budget for Contemplative Science to be considerably smaller, especially in terms of technology and engineering expenses. ***(TODO: make some rough estimates based on CERN's budget experiences?)***

Crowdfunding?

Pooling resources: always a win/win? Some overhead is reduced, other overhead (e.g. for coordination) is introduced … how can we make it easier for everyone to pool resources: platforms, organizational design, software / hardware / building infrastructure, …? Can we attract funding specifically for building these kinds of collaborative infrastructure, upon which collaborations can thrive more easily (see e.g. the infrastructures that CERN has built up to the present)?

TECHNOLOGY

Technology and tools: …

- Open collaborative science: Gigantum, Open Science Foundation (OSF), … (in development @ CERN: SWAN - Service for Web based ANalysis, a web-based data analysis platform at CERN)

- Schedule and resource management: Indico, …

- Meetings: Vidyo, Zoom, …

…

SKILL AND KNOWLEDGE TRANSFER

Training: offer summer/winter schools and training workshops that are easily accessible for students (including webcasts/recordings) (equivalent to academic training lectures at CERN), with the aim to share best practices and offer skills-training in a spirit of generosity.

Sharing data: set up tools and (computing) infrastructure for sharing data and for enabling full reproducibility of data selection and analysis (e.g. Gigantum) (a technological challenge); cultivate the practice of sharing data and knowledge for the common good in a spirit of generosity (an ethical challenge of individual and group conduct).

Sharing materials: e.g. OSF initiative: https://osf.io/meetings/ ; preprint servers e.g. arXiv, MindRxiv, PsyArXiv, bioRxiv, …

Best practices: Large collaborations can form working groups and expert panels to discuss and evaluate best practices, scales, protocols, statistics, … curation: who are the elected "experts"? Rotating "expert" conveners and coordinators e.g. every 2 years. Documentation of assessment and development of guidelines for ethical and methodological quality standards. Open to internal peer-review processes. Beware of "all eggs in one basket" by encouraging and requiring complementary approaches based on different assumptions and theories! (compare CERN: various models for SM, SUSY, string theory, etc. use different theoretical assumptions that can gradually be falsified by the data: pushing the exclusion limits, or making discovery at 5 sigma. Various analysis methods and statistics are being used: e.g. "blind" analyses, … need to ask CERN contacts with broad analysis expertise here.)

POOLING RESOURCES

- shared infrastructure, equipment, materials

- shared data

- shared expertise and manpower

Transdisciplinarity: a sufficiently large and inclusive collaboration can include and benefit from multi- and transdisciplinary perspectives on any research project and paper (see also Evan Thompson's ISCS 2016 keynote); this kind of inclusive process can also be built into the

research environments themselves, not just at the level of paper writing! What would it look like in a CERN-like research hub?

Co-opetition: CERN currently employs a collaborative research program based on several competing experiments, which allow for independently derived experimental research and analysis strategies, plausibility checks and balances, and "combined analyses" that systematically compare and bring together the various results from individual experiments. We can begin to imagine a scenario in which several projects spanning different aspects of contemplative research are "co-opeting" with each other in such a coordinated way that results can be easily compared. Consider an environment in which we have a Shamatha Project, a ReSource Project, a Dark Night Project, etc., each branching into the same or a similar set of sub-projects that comparatively study different disciplines and meditation practices with each of their respective protocols (e.g. Shamatha meditation, Burmese Vipassana, a specific Zen meditation, Dzogchen, Daniel P. Brown's method of "Pointing Out" meditation, Non-dual meditation, Christian "centering prayer", meditation practices from Jewish and Muslim traditions, etc.). One could then assess e.g. Dzogchen from each of these main projects' perspectives, and compare results with those from e.g. Shamatha meditation from each of these main projects' perspectives - having used the same standardized protocols. Furthermore, each of these main projects would arrive at their own unique insights made possible through their exact protocols, research questions and methodologies.

Slow Science and Co-Authorship: … (TODO: compare with CERN; can we give research participants co-authorship status? What might be suitable conditions/prerequisites for this?)

LOCAL INFRASTRUCTURE: RESEARCH HUBS

Flagship projects and distributed shared infrastructure: CERN-like contemplative research facilities/hubs on smaller / varying scales? What might be our "flagship" projects, questions, ideas? Can we ultimately build multi- and trans-disciplinary research hubs, as envisioned under "co-opetition", on each continent for more diligent research? This could allow for multiple replications in different environmental, cultural, … contexts, and help us understand context-dependent systematic variability!

"Mobile labs" that can travel from institution to institution, and/or between communities of practitioners, e.g. every 2-3 months?

SKILLFUL CONDUCT OF/IN A SCIENTIFIC COMMUNITY

- code of conduct

- constitution

THE HIGH ROAD: CHALLENGING TRANSITIONS AHEAD

…

THE ROADMAP IS NOT THE TERRITORY: A CALL FOR HUMILITY, PATIENCE, DILIGENCE, PERSEVERANCE, TRUST, NOT-CLINGING, AND KINDNESS

…

(note: Achim suggests: practical resources - where can individuals and groups turn right now for support with collaboration, learning, supporting organizations, …?

GLOSSARY

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"Art of Hosting" website: https://www.artofhosting.org

VARIOUS

"Contemplative Scientific Collaboration" website: https://www.contemplativecollaboration.org

"Contemplative Life" website: https://www.contemplativelife.org

"Center for Contemplative Mind in Society" website: http://www.contemplativemind.org

"A Network for Grateful Living" website: https://gratefulness.org

ACKNOWLEDGEMENTS

Before thanking the people, beings, and influences to whom I am gratefully indebted (knowingly and unknowingly), I want to take full responsibility for any mistakes, improper citations, naive ideas, unfeasible propositions etc. that readers may identify in this work.

The main inspiration for this project came (1) through several years of experience with scientific collaboration in the ATLAS experiment at CERN, interactions and conversations with colleagues during and after working on my dissertation there (Yi Ling Hwong, Claudia Marcelloni, Steven Goldfarb, James Gillies, Markus Nordberg, Michael Doser, and many others), and (2) through my Buddhist meditation practice, my inquiry into human experience, and the serendipity of meaningful encounters during my travels.

The main initiatory stages of conception of this project arose during meditation retreats in Puregg, Austria, and Pian dei Ciliegi, Italy. Its gestation and birthing process has generously been supported and mentored, for several years, by Scott Virden Anderson and the Yoga Science Foundation, and I owe my humble beginnings and ongoing efforts of understanding "wholeness" to Scott. Conversations with Cliff Saron, Zoran Josipovic, Judson Brewer, David Vago, Marieke van Vugt, Andreas Roepstorff, Astrid Lunkes, Antoine Lutz, Amy Cohen Varela, Michel Bitbol, B. Alan Wallace, Bruce Bough, Hans-Guenther Schwarz, Mirjam Luthe-Alves, Beau Burrows, Stuart Dambrot, Clare Ellis, Glenn Hibbard, Colin Campbell, Dav Clark, Frank Schumann, Annika Lübbert, Anne Harley, Michael Spezio, Terje Sparby, Ian Andersen, and many others have contributed (directly and/or indirectly) to the ideas in this project.

The early seeds of inspiration around the themes of separation and interdependence (or „interbeing"), scarcity and abundance, etc. were sown in me through the works of Buddhist teachers such as Thich Nhat Hanh, and of writer/activist Charles Eisenstein. I count my two brief personal encounters with Charles among the pivotal events in my life.

My collaboration with Nathalie Legros has turned my attention to the relevance of practices and processes, and I keep learning about process facilitation and emergence from Nathalie. Arnold Fall has introduced me to the Council practice in the tradition of the Ojai Foundation; I keep practicing Council while learning from and with its carriers, teachers, and elders, of whom I particularly thank Marlow Hotchkiss for our deeply heartfelt conversations. Achim Heger has led me to the practice of Nonviolent Communication, and our long conversations and coaching sessions have provided me with much collaborative support. I owe my attention

on values and intentions, my transformative experiences with intentional community building and authentic reflection, and the experience of integrated cooperation and *„showing up“* in the dojo of life, to the Leap Forward community and its wonderful members.

My brief encounters with Brother David Steindl-Rast OSB have helped me integrate many loose threads of heart and mind, science and mysticism, or (as Jeffrey Kripal might put it) „reason, faith and gnosis“, into an experiential tapestry that I can still barely describe in words, yet it guides me like an unspeakable inner compass.

I thank my meditation teachers and retreat leaders, especially Hannes Huber, and also Ven. Vivekananda, Heidi Bachmann, B. Alan Wallace and Daniel P. Brown, and all Sanghas with which I have practiced, for the priceless gift of the Dharma and community.

With all my heart I thank my family and my partner Sylvia for their enduring and loving patience in supporting me, and for encouraging me to follow my unorthodox path.