

# BREAKTHROUGH

the  
origins of mind, space and time



Introducing the  
LOTA philosophy of science.

With new answers  
to the ultimate  
questions of  
life.

Cornelis Slenters

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*Suggestion:  
Make a printout of the flowchart on page 143, for reference during the read.*

# **BREAKTHROUGH the origins of mind, space and time\***

*Introducing the LOTA philosophy of science.  
With new answers to the ultimate questions of life.*

**Cornelis Slenters**

also author of the Universe Grand Design.

The LOTA philosophy of science makes **coherent relationships** visible among **all** of the following fields of interest:

- Evolution
- Creation
- Mind
- Brain
- Soul
- Matter
- Origin of consciousness
- Origin of our individual identities
- All known science disciplines (looking for exceptions)
- Origin of energy
- Near death experiences
- Reincarnation
- Humanistic psychology
- Out of body experiences
- Para-psychology
- Benefits of meditation
- Chinese medicine & TAO concepts
- Remote healing
- Wholeness and the implicate order

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men and women  
wishing to discover  
the source  
of their own genius.***

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Enjoy,  
Cornelis (Cornel) Slenters

**Feedback from readers of Breakthrough:\***

“My perspective was seriously expanded last night as I finished reading this book. It is an easy to read, engaging and short journey through a truly fundamental shift in thinking that rests on a few basic concepts, accessible to all. I can’t tell you what a gift it was to read it now as I am preparing the first Mind Workout program.”

*Dr. Lilly Evans, United Kingdom,  
Managing Director, Strategic Learning Web*

“A daring and stimulating book, deserving to be widely known.”

*Prof. Dr. Ueli Schibler,  
Faculty of Molecular Biology, University of Geneva*

“I love it. Upbeat, leading edge and inspiring!”

*Dr. Mary Weed-Pickens,  
Former HP Europe Communications.  
Communications consultant and author.*

“These are most thoughtful and enlightening ideas on the nature of life and mind. A wonderful contribution of wisdom.”

*Dr. John Stevens, Switzerland,  
Managing Director of Carouge Consulting*

“The LOTA theories are an outstanding contribution to our understanding of consciousness. Cornelis Slenters pursues an idea that most other writers on consciousness have ignored. Writing this book is an act of courage.”

*Dr. Matti Pitkanen  
Author of the TGD inspired theory of consciousness  
University of Helsinki, Finland*

I admire the enthusiasm it radiates throughout and its style for easy reading. Moreover, as I discovered, it makes a nice gift for friends who share an interest in philosophy. Wishing you a large readership.”

*Fred W. Schroeder,  
former VP of Hewlett-Packard Co., Palo-Alto*

“A highly stimulating and thought provoking book. These are important ideas, which we hope to be able to study within the UGWB curriculum.”

*Prof. Dr. Gunnar Carlsson, Denmark,  
Director of Canhelp  
Co-founder of the University of Global Well-Being*

“This book is a long-term companion with stimulating new insights in the nature of mind, creativity and learning. A ‘must read’ for every professional who is involved in moving organizational learning forward.”

*Paul L. Hamner  
Educational Services Manager,  
Hewlett-Packard Europe.*

“Wow! This is powerful reading. I am looking forward to the sequel.”

*Dr. Joe Habarta, Boston  
VP of Corporate QA, Ares-Serono Group*

“A brilliant book, with a wonderful gift to communicate penetrating new insights in the nature of mind, from which to grow our inner strengths.”

*Jan Leguyt, Netherlands,  
Director of Outplacement,  
Lucent Technologies*

“These ideas offer a new logical perspective on the nature of consciousness and mind, with significant long-term implications.”

*Prof. Dr. Robert Steffen,  
Faculty of Medicine, University of Zurich*

“The book is well written, in a style which makes fluent reading possible. This is important since; on the other hand, the content is quite demanding and requires much thinking. There are many illustrations in the book which explain the thinking and concepts in diagrams. These are very useful. The content of the book is basically of philosophical nature. In developing this philosophy it makes much use of present day knowledge in science, psychology, as well as eastern and western ways of thinking. The many connections made to science are not just examples or illustrations to explain the philosophy. The connections go further in so far as the way of thinking in the exact sciences is incorporated in the method with which the philosophy is developed.”

*Dr. Albert Hofmann, Geneva  
retired physicist.*

“I studied it with great interest and admiration. It is a remarkable synthesis of thoughts ideas, new for our time. This book is a great achievement.”

*Prof. Dr. Erland Lagerroth  
Lund University, Sweden*

“This book is an accessible explanation of the author’s theory of life and mind. He describes a number of principles such as the “Great Scaling Pattern”, interconnectedness and adaptive loops that underlie the phenomena of the physical and non-physical realms. He sees the unity underlying everything and argues that consciousness is primary. He also discusses the creative role of the subconscious and compares his insights with those of the Seth material. The book presents an integrated understanding and challenges the reader to tap the creative resources of the subconscious mind.”

*David Lorimer in Network review 1998  
from the Scientific and Medical Network.*

“I have been a student of various schools of thought and have read your book three times. I find your LOTA concepts to be the most intuitive explanation for the basis of everything. You are among my heroes in philosophy. You have hit the nail on the head. Your work deserves the attention of the Nobel Committee. Well done .... and thank you.”

*Dr. Theodore Schulz  
Ria Vista, CA, USA*

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\* Feedback on the Breakthrough print editions.

## **Introduction**

A young brilliant philosopher, René Descartes, proposed to separate mind and body as a temporary expedient to permit investigation of the human organism unencumbered by the dogma of the ruling church. This basic idea has been dominating science, medical practice and western thought for almost four centuries. Cogito, ergo sum,...I think, therefore I am! It has lasted this long, because it brought results.

Nevertheless, there is a clear call by a growing number of scientists, practitioners in healing professions and others for a new philosophical framework, since their results are often constrained by the current frameworks of thinking.

New Age literature has a fundamentally different message, because it communicates the incredible interconnectedness of mind, body and spirit.

In essence, these forces represent a schism in our society, which runs deep and wide, often with disastrous consequences.

This book introduces a new way of thinking, based on logic and reason, leading to a new scientific framework where these three forces combine.

These lines you just read are the opening lines in the original print version of 1996. In the meantime the fronts have hardened and the “schism in our society” mentioned has not diminished.

In 2007, the Council of Europe issued guidelines for all member states on dealing with “The Dangers of Creationism in Education”.<sup>1</sup> The council’s response is to position the evolution theories of Darwin as a central tenet in teaching science and treat it as ‘proven’, based on ‘methodological materialism’. Consequently, this ‘science by policy’ denies every schoolchild and young adult the logical existence of their soul, because Darwinian evolutionary theory has **no** place for the soul.

This book takes you on a journey where the existence of our souls is in full harmony with the discoveries in science, including evolution.

I have a dream .... that our educators will encourage every child to discover their own soul and discover it as a source of inner strength, energy and creativity. That they feel confident in doing so because they know that it is in harmony with logic, our great heritage in the sciences and our accumulated evidence about ‘who we are’.

Enjoy the read,

Cornel Slenters

# Part one

# Think again

*“Deep within man dwell those slumbering powers; powers that would astonish him, that he never dreamed of possessing; forces that would revolutionize his life if aroused and put into action.”*

*Orison Swett Marden*

## **Chapter 1**

### **Arena**

- ★ **Act one**
- ★ **Reflections**
- ★ **A new level of thinking**

*“There is one thing stronger than all the armies in the world,  
and that is an idea whose time has come.”*

*Victor Hugo*

## Act one

I sensed the excitement of the audience in this large conference room of the Hotel Intercontinental in Geneva. The chairman introduced the next speaker, a famous scientist with a worldwide reputation for brain research, recipient of the highest scientific honors and known as a brilliant speaker.

Meeting here with a former colleague and friend, I felt fortunate to make it into this gathering. The place was clearly filled to capacity. My friend and I held a professional interest in the topics, originating from our experience in the 'psychology of learning'. As educators in large multinational corporations, rated among the best managed in the world, we knew about the extra edge of competitive advantage we could create by fostering **that** which seems to be making a difference.

This was more than book knowledge, it was an understanding grown from years of exposure in the rough and tumbles of real life organizations, with all the stress, conflicts, rapid changes and competitive pressures.

We were both fortunate to work in a capacity where the entire environment served as a giant laboratory of real life experience, allowing us to be constantly in search of the illusive elements at the edge between success and failure.

He is now a former colleague, because I departed from the big company environment a few years ago. I have now my own training company. I give courses, presentations and seminars, consult, write and do research.

Nevertheless, I still feel a part of this great scientific, industrial, medical community at large. it was my theatre of activity spread out over Europe and North America, providing my family and me with great experiences spanning 30 years. It is the environment where I feel at home and have most of my trusted friends.

But we run ahead now of the facts. The professor gave a brilliant presentation, full of humor, quick-witted and highly entertaining. After the warm applause died down, someone asked about the energy fields and auras around human bodies. The professor collected his thoughts, scraped his throat and explained in a fatherly tone:

'Yes, I am familiar with the writings of Bergson on the subject, but these energy fields simply do not exist! '

Not believing my ears, I turned to my friend and asked about it. Oh yes he said, you heard all right. Then he explained how the light conditions of the background behind the professor's head and the reflections of the overhead projector were just right for him to see a grey-blue cloud of thought build above the speaker's head before these words started rolling out.

Never mind, I thought, that does not help us much under the given circumstances, but what about the tremendous accumulation of evidence that exists on a global scale? These energy fields and halos are known in 97 different cultures around the world - by very specific words - in each of these cultures. It is a global phenomenon cutting across cultures, race, religions, continents and even time. There are millions of people walking around on our planet who can see them. Moreover, for those who cannot see them, there are easy methods for learning to sense them.

What's this man doing? Turning all these people into unreliable freaks? How can he stand up there and declare to be the beholder of absolute truth, taking on a role as high priest in a 20th century temple of science! OK, slow down. Maybe it is just an easy way out or maybe he needs some help.

So, I approached our speaker after the event and offered my help. There was no interest in the proposition on his part and I just put the event behind me.

## **Reflections**

It is a true story, with some minor changes in order to disguise identification. In simple terms, the speaker tries to explain reality by means of physical phenomena only. One could argue that it is the safest way to hold devious alternatives at bay and reduce the risk for charlatans and fraud. It is also the safest way to claim the high ground for logic and reason.

In this view we originate from matter, thus when we die it is "puff and over". Further, it suggests that all evolution takes place in the material world, as a result of competitive events.

But then, when it comes to creativity, can we trust our inner potential to be more powerful than what is perfected from the outside? Indeed, where would this creative smart capability come from if it were not from the outside?

There is another view emerging from a pile of books on my desk<sup>2</sup>. I have learned to appreciate these books over the years because they helped others and me to discover the great creative potential that hides in all of us.

They reflect a view that suggests another plane to our reality where everything is interconnected. The idea of a collective consciousness at a deeper level, where all knowledge is accessible, if we know how. It is the plane of our origin and our destiny after life.

It is the view reflected in oriental philosophies such as Zen and Buddhism, as well as in New Age literature.

But then, where is the logic?

Who is right?

Or is there some other logical explanation?

## **A new level of thinking**

Our beliefs are rooted in certain assumptions about reality, which we all acquire in our own way from our experiences in life.

These assumptions are rarely questioned when they find enough reinforcement in their surroundings.

Therefore, we shall return to the roots, re-examine our assumptions by casting a wider net, then have logic and reason be our guides in the discovery of hidden assumptions. Likewise, we shall be rigorous in checking our discoveries with reality.

Moreover, we shall assume that our treasure is buried deep, otherwise it would have been found already. Nevertheless, while we peel away at layer upon layer of hidden assumptions, we shall never waver from our ultimate target: to find a logical framework from which our incredible powers of creativity, buried inside us, can be explained.

The rest is history, because we know now that this ultimate target requires nothing less than a revisit of our ideas on space, time, energy and consciousness.

## **Chapter 2**

### **The smart start**

- ★ **Casting a wider net**
- ★ **Search for “the obvious”**
- ★ **What is an interaction**
- ★ **No boundaries**

*‘Discovery consists of looking at the same thing as everyone else and thinking something different.’*

*Albert Szent-Györgyi*

## Casting a wider net

Scientists groomed in the tradition of materialism will often question if it is really necessary to cast a wider net. They will reason that their views on the physical world are already flexible and even the currently unexplained, such as energy fields around human bodies, will one day be explainable in physical terms.

However, there is at least one good reason for casting a wider net and taking a fresh look. It leads to a new understanding of time, space, energy, consciousness and the origin of our minds, as described in this book. By doing so, we are not giving up on our sanity, logic or reasoning power. On the contrary, we gain.

Frequently, they will challenge this by asking for an example of something that is outside the physical domain, thus, outside the current playing field. The response is in two steps. We start by defining the physical domain and we typically agree on the following description:

*Phenomena that are bound by the space-time dynamic order, the laws of space and time.*

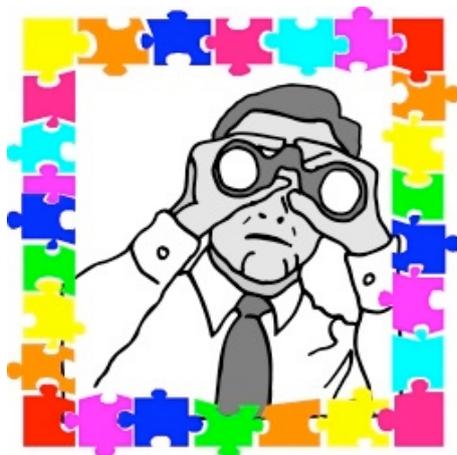
Next, I ask them to classify the rules of a chess game. Sure, we can see players in action applying the rules or we can read about them, but how about the rules themselves? They are not bound by space, and they are not bound by time.

So what are they?

At school we learned to call them 'abstract' or something similar, like a special compartment in our minds where we put these things - a tradition that is many centuries old. Clearly, if we want to find explanations for the deeper things in life, we better start with 'something' that is wide enough to accommodate these ideas as well. Which means, we need a starting position, a playing field, a net, that is wider than space and time. This playing field, the net, the 'common soup', should be independent of anything that comes to mind. Plus, it should be omnipresent, to be found wherever we look.

If we could ask a fish to define water, there is a problem unless the fish has experienced the alternative of non-water.

We are facing a similar challenge, as is illustrated here by this person looking through his glasses.



The whatever it is, will be so transparent and obvious that it is most likely overlooked. In this illustration we do not care about the subject this person is looking at, nor about the person. Instead, we are looking for a universal concept from which this frame is constructed and from which ultimately this person emerged. We are looking for the blatantly obvious, but most likely overlooked, as our starting position.

### **Search for “the obvious”**

We shall begin by turning East:

The great philosophical ideas of the Orient are holistic in nature and the recurring theme is the idea that everything is connected. This notion about connections can be interpreted in two fundamentally different ways.

In the first interpretation, connections are seen as the result of activity between things. That is,

*things* first and **then** interactions.

The second interpretation is to view interactions as the **basic carrier**. That is,

*things* **result** from interactions.

We shall now turn West to explore ideas that link up with one of these two interpretations. An interesting philosopher to quote is Heraclitus,

nicknamed the 'obscure' by his ancient Greek compatriots. He is interesting, because recent scientific discoveries do resonate surprisingly well with ideas already expressed by Heraclitus during his lifetime, circa 540-480 B.C.:

*Common sense is mistaken in thinking that the world consists of stable things. But, interestingly enough, it is mistaken on two accounts: Both in thinking that the world is stable and in thinking that the world consists of things.*

*Heraclitus*

Therefore, we can find good consistency between eastern thought, western thought and modern science when we start from the following premise:

***Everything comes about as a result of interactions with something else.***

This is merely a premise at this stage. It is like betting on a horse. When the horse wins, we know that we picked the right one. So it is with interactions, appearing to be a universal phenomenon from which everything emerges. If interactions lead us to the ultimate target, then we have the confirmation for having picked a winning horse. Of course, you have already the benefit of hind sight since I would not like you to waste your time on false starts. It is a winning horse!

Nevertheless, there is a certain amount of groundwork to be done. If interactions are a universal phenomenon, a universal soup, then we should find them everywhere, even if they are not obvious at first sight. Conversely, our universality goal will be clearly limited if we would find even one exception to our target of it being omnipresent.

More than that, we know already that this universality by itself is not enough. This common soup of ours, interactions, are to be so transparent that we cannot detect any boundary conditions at all, such as limits by space, time, the physical or non-physical domains. If we find limits, then our aspirations for a broadest possible framework for the study of our reality will be limited by boundary conditions that are most likely not even visible to us.

Thus, before we charge ahead with interactions as the selected universal soup, it needs to be checked for its omnipresence and for

possible boundary conditions. Moreover, there is another important question yet to be answered:

## What is an interaction?

***An interaction is any relationship between two things or events, no matter where it started or in which direction it flows.***

That is the definition we will use throughout.

It looks easy and simple at first sight, till we start searching for every day examples and discover that an interaction rarely comes alone. Because in an every day setting, interactions are actually taking place at many different levels. A glance at this picture below will illustrate the point.



What interaction? At what level? Even your imagination is an interaction. Nevertheless, we will keep it simple for a start. This example shows merely an interaction between two people.

Interactions can be in either direction or in both directions at the same time. We just do not care about its direction. Consequently, discussions about cause and effect are of a more detailed level and do not enter into it.

Interactions are to be seen as dynamic and they can be physical or non-physical.

Here are some other examples:

Hitting a PC with a hammer involve interactions between the hitter and hammer, as well as between hammer and PC. It is an example of physical interactions.

Examples of non-physical interactions are less easy to find, because they depend so much on our own personal interpretation as to what is physical and what not.

For instance, our thoughts are a form of interaction. They involve interactions between synapses in the brain, between our brain and our senses, between our brain and our body, etc. Is that all? It depends on your point of view, opinions are divided on it. If there is a non-physical component to it will it be suppressed in the framework of interactions? The answer is no, because with interactions we will have removed the barriers between the physical and non-physical aspects of our experience.

Here are some other examples of possibly non-physical nature: Telepathy between two people over a long distance. The blessing given by a spiritual leader. Natural healing with the hands. Energy fields and halos around human bodies. Again, in many instances it is not known where the physical stops and the non-physical starts in these examples. Nor is it important if you believe in them or not, they can now be accommodated for in this new framework of interactions and that is important. Examples of pure non-physical nature are mathematical formulas.

## **No boundaries**

Are there really no boundary conditions when interactions are used as the medium?

This is a most important question, because boundaries found at this stage will substantially reduce the potential breadth of our explorations. We will check them one by one:

Starting with our regular senses, such as hearing, touch, taste, smell and vision. Interactions can cover them all.

Then, there are senses that are less clearly defined and may include non-physical aspects. For instance, it can get quite uncomfortable when someone is staring at your back. Or, you have a well developed sense of intuition. Nevertheless, they are all interactions, physical or non-physical or both; it makes no difference.

Moving now to time and space. Do they impose boundary conditions on interactions?

Not really, because we can describe relationships between things without the need to be specific about the where. A contemporary example

are the world-wide PC-networks or webs. At the user level we deal with interactions between files and databases without the need to know the physical locations of this information.

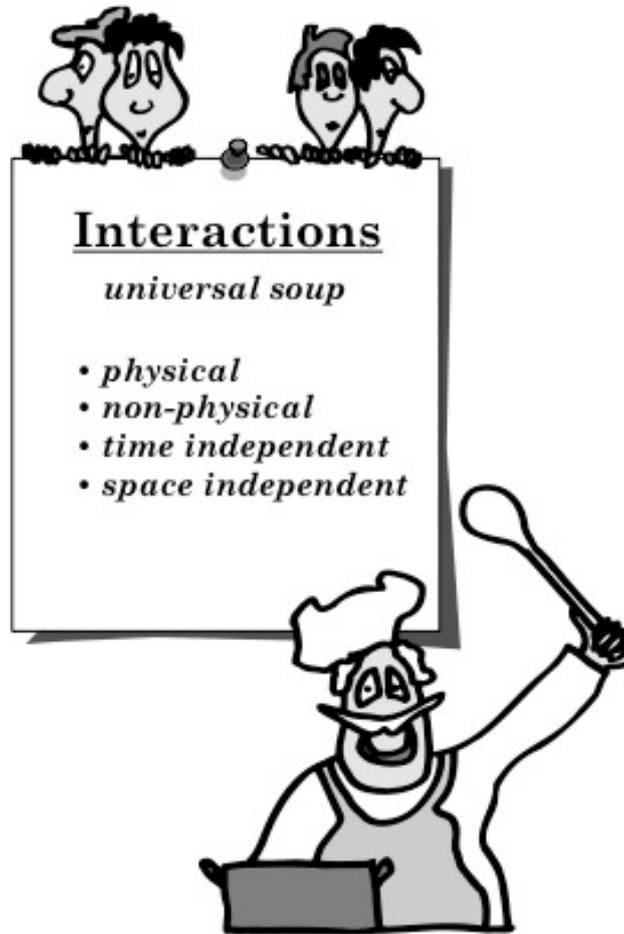
Last but not least, interactions can be described without the need for time as a dimension, because interactions are of a higher logical level than the time bound cause and effect relationships.

In summary, with interactions as the medium of expression, we have the means to cut through boundaries of space, time, the physical and non-physical. We can start tracking patterns of interactions, independent of the media or boundaries through which they flow. This makes us free to start looking at things as an overall system and discover overall patterns that cross our traditional boundaries of perception.

Hence, we have created an opportunity to look at our reality as an integrated system, before things are separated into fragments of seemingly unrelated patterns.

However, we run ahead of the facts, since there is the unanswered question of universality. That is, are interactions as omnipresent as they need to be in order to qualify for the nomination as 'universal soup'?

The coming chapter will serve double duty and it will illustrate - among others - that interactions are omnipresent. Therefore, interactions will qualify as the medium that has no known boundaries and is omnipresent. Time for a brief celebration!



***Interactions are universal, since they appear to be omnipresent and are not limited by space, time, physical or non-physical boundaries. Thus, enabling the exploration of our greater reality through an integrated systems approach.***

End of chapter 2

## **Chapter 3**

### **On the trail of interaction patterns**

- ★ **How much do we know?**
- ★ **Probing in-depth**
- ★ **Probing wide**
- ★ **The emerging pattern**

*'What pattern connects the crab to the lobster and the orchid to the primrose and all four of them to me? And me to you?'*

*Gregory Bateson*

## How much do we know?

Interactions have the pleasant property of being closely linked to man's quest for knowledge. So we can test our premise in the field of *knowledge* and determine if *interactions* have the characteristic of *universality* we are looking for.

Interactions are not always immediately visible and there is a benefit, for that reason, to estimate what might still be hidden. An actual calibration of man's general knowledge about his environment can do that for us:

When we enter a medical library, we can see entire floors with books, filled with information related to one subject, namely the human body. At first, this is impressive and it is very easy to be misled by the immense volume.

Over the years, I was fortunate to meet a number of *wise old men* in the related fields whom I could ask how much we actually know, collectively. Of course, no one really knows, but their best estimates are remarkably consistent: Probably not more than just the tip of the iceberg, they say.

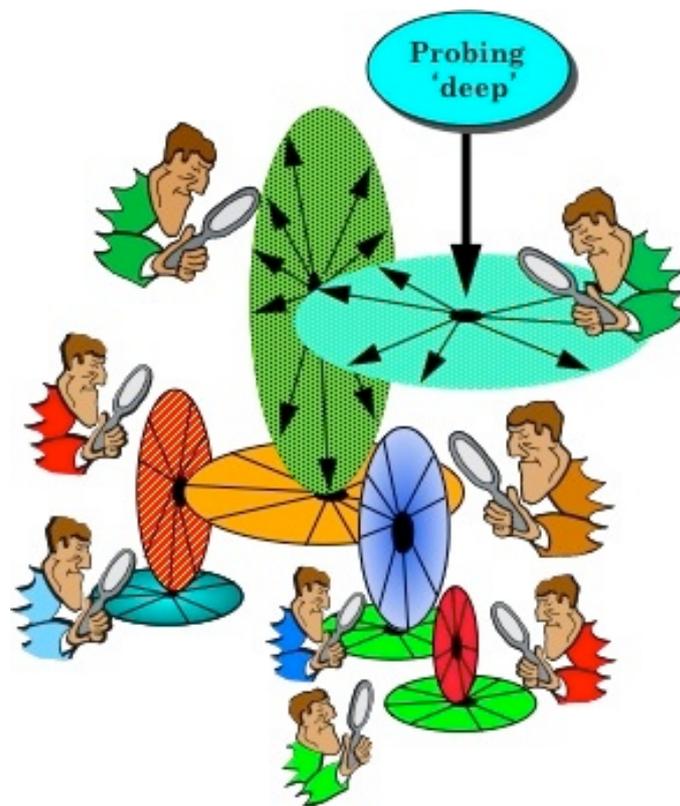
This on one of the most intensely studied subjects - the human body! Hence, when we start tracing interactions in man's quest for knowledge, we should be keeping in mind that the known interactions are just a scratch on the surface, because, man's collective knowledge and understanding of his environment is probably just:

***The tip of the iceberg, at most !***

## Probing in-depth

What happens when people start probing in a particular field and keep it up for some time? We can watch the effect, for instance, in the field of micro-biology by following the trail of development over a decade.

The emerging scenario is this: Every time a problem is studied long enough, it is the beginning of a whole new field of specialization, which in turn branches out again in new directions. The picture below illustrates the basic pattern of development.



Thus, every new branch leads to the discovery of new *interactions*.

In short:

***The more we study a field, the more interactions we discover !***

The speed of development in other fields can be different, yet, the emerging scenarios are identical. It is like digging around in a bottomless hole and finding more and more of it, constantly. We find it in problem

solving techniques, in the business environment, conflict resolution, quality improvement programs and so on. Indeed, it is difficult to think of a field where it does not apply.

## Probing wide

What happens when we climb out of the hole, remove our focused glasses, take a distance from the scene, put it in perspective and try to absorb a *wide* view?

We can test the effect by selecting a particular field of interest and trail it on its path through the wide world. We can do this also in the library by selecting one field, for instance *medicine*, and then trail it around the library.

For this purpose, we select a well stocked **medical** library. Therefore, in principle, most of what is in that library is linked to the subject of *medicine*. We start the trail by picking some books from the shelves, just at random.

In most of these books, we find authors who studied a problem and list references in the back of the book. These references are links to other subjects and these links are important enough to be listed. Clearly, this is only a subset because there are many other implied links buried in the text that are not listed. Significant for us is the fact that these links are references to recognized *interactions*.

These reference lists lead to a great variety of other subjects, such as sociology, geography, climate, economics, tourism, government, technology, engineering, and so on. Moreover, in the library sections on any of these other subjects, there is a similar pattern of dispersion. Not only that, we will also find references back to the *medical* field.

So, now we are on to giant interaction patterns which form circles by looping back to their origins.

In short:

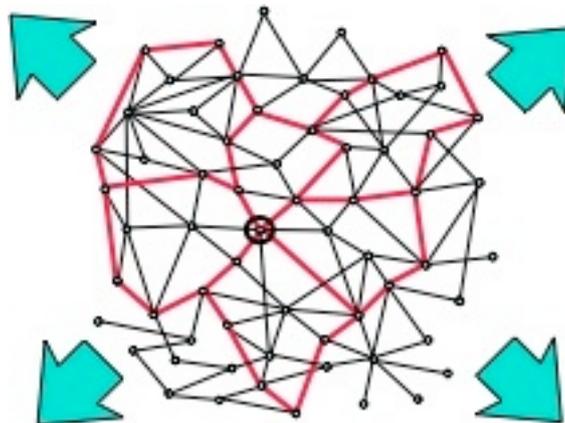
***By probing wide, taking a distance, we discover that interaction patterns also form circles, loops.***

## The emerging pattern

The *in-depth* probes showed a continuous branching out of interactions. The *wide* probes showed the circularity of interactions, loops.

Yet, **both** of these developments are happening **within the same overall web of interactions**.

Consequently, if we draw a picture with both of these patterns superimposed and inter-linked, we arrive at the following diagram.



We take the center of this pattern as the beginning of our search, representing a certain subject. Then we follow the trail of the interactions **branching** out from that node, each leading to new directions of inquiry.

Each of these branches, meaning *interactions*, lead to new subjects which link into the pattern. This is the effect of **focus**, which is most visible by following the thin lines.

Now, if we stand back for a **wide** view, we can see the **circularity**, the loops, in certain interaction patterns. This is most prevalent by following the thick (red) lines.

Of course, in reality these interactions do not wear any specific tags such as 'thick' or 'thin'. Indeed, if they did, we would become more aware of the deep nature of 'duality' and learn better how to deal with it.

Nevertheless, the overall pattern emerging from this brief thought experiment is very fundamental and we can detect it all around us, if we

### *Chapter 3 - On the trail of interaction patterns*

pay attention to it. For example, we can recognize it rather easy in different forms of life. Another obvious example is in the way we organize society, as is visible in road maps. Consequently this pattern has captured the fascination of writers, scientists and philosophers throughout the ages, sometimes referring to it as the 'web of life'. There is a holistic nature to this pattern and that resonates well with recent developments in science. We will be congruent and refer to this pattern as the 'web of life' in the upcoming chapters.

End of chapter 3

## **Chapter 4**

### **The hidden power of interaction patterns**

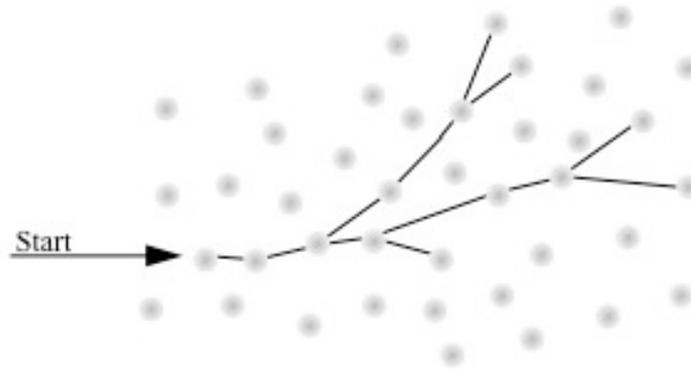
- ★ **The two alternatives**
- ★ **The hidden power of loops**
- ★ **Loops in the engineering world**
- ★ **Cycles in society**
- ★ **A bold move**

*'Billions and billions of elephant cells do not make an elephant. It is the way they interact!'*

*Rudolf Weber*

## The two alternatives

Interaction patterns can evolve in only two basic ways and that's it! Therefore, it is easy to track each of these two theoretical alternatives and select the one that has the greatest promise. For instance, interactions can form a linear interaction pattern as illustrated in the following picture.



Here we see one interaction triggering another interaction and so on, more or less following a linear path. It is a pattern without loops and after the initial ripple it will come to a standstill, withering away.

But in the second alternative, the interactions are forming a pattern of events where the interactions are looping back to the origin of the interaction chain. The picture below illustrates the general idea. It is precisely the looping aspect in these patterns that is of enormous interest, because they play such a fundamental role in our lives, yet often unnoticed.



The fundamental idea that loops are closely linked to life is rooted in many cultures and philosophies. For instance, the circle, as a symbol for cycles of life, is frequently encountered in the cultures of American Indians. Turning to the Orient, we find the ideas of circularity and cycles as important concepts in the religious philosophies of Zen, Taoism, Buddhism or Hinduism.

In fact, with such great universality just looming behind the horizon, there is this irresistible pull to take a closer look at these loops.

## **The hidden power of loops**

We eat when we are hungry, we drink when we are thirsty, we sleep when we are tired.

These are three examples of looping interaction patterns we encounter every day. In these examples, it is quite easy to follow the loops around and observe, in a highly simplified fashion, what is happening:

When we feel hungry, thirsty or tired, there are interactions at work telling the brain about these body conditions. We desire to take corrective action because we feel better afterwards. So we do, if we can, till the ongoing feedback has signaled that the desired conditions are restored.

All three examples are leading to adaptive behavior as a result of the ongoing feedback and the way this feedback is used within the pattern. Hence, it is thanks to the feedback that restoration of the desired conditions has taken place. They represent just simple examples of a broad and often complex category of looping interaction patterns all leading to adaptive behavior. We will call them patterns with adaptive loops.

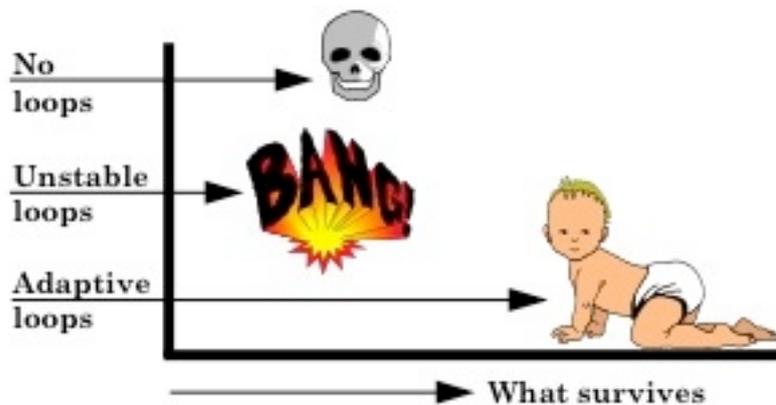
In general, patterns with adaptive loops provide better adaptation to the changes taking place in the environment. Of course, when we generalize from the three examples of eating, sleeping and drinking, we are faced with some profound philosophical questions just about to leap out of the bush and ready to grab us by the throat, thereby risking to be silenced forever. I will utter them here, with the assurance that they will be addressed later, when we have made full circle: When we generalize, we have two profound philosophical questions cropping up, namely: who is doing the choosing as to what is the desired behavior. Rest assured, these questions will not be forgotten.

Besides the adaptive loops, what other ways are there for looping patterns to behave?

There are two other alternatives and both can be illustrated with the previous example of hunger. The first alternative is to ignore the signals of hunger. This breaks the loop, creating a no-loop situation, and it will result in a steady deterioration of the person's condition.

The second alternative, again theoretical, is to eat poison food whenever there is a feeling of hunger. It leads to an accelerated deterioration of the person's condition. Thus an example of a looping interaction pattern that leads to unstable behavior, referred to as a pattern with unstable loops. More realistic examples of patterns with unstable loops are: explosions or the onset of chaos.

Therefore, when we line up the three possible alternatives for looping patterns, there is a clear winner in survival:



Hence:

***Adaptive loops last longer than any other interaction pattern and hold the key for our greater understanding of life and the universe.***

What about other kind of loops, such as these associated with non-life situations? Can we just ignore them or do they hold some important information for us?

Indeed, we tend to separate them in our minds as something different, yet that could be one more hidden assumption. So, let us find out.

## **Loops in the engineering world**

There are many similarities between interaction patterns with adaptive behavior and the concept of feedback in the engineering world. Feedback in engineering design is the deliberate creation of loops in interaction patterns. A closer look will bring some fascinating new insights and raise some important questions about its deeper meaning.

It was in the early part of the 20th century that pioneering engineers in electronic circuit design discovered the tremendous power inherent in feedback. Indeed, the use of feedback as a concept in the design of electronics is possibly the largest contributor to the fantastic development of electronics.

For instance, it would be very difficult to find a piece of electronic equipment in your home, your car or at work that could exist without it.

But most fascinating, as engineers learned to calculate the effects of feedback, they discovered that these effects are not dependent on the technology of the day. They discovered that the effect of feedback is expressed in a basic mathematical relationship, completely independent of the current technology. In other words, the effects of feedback appear to be based on some universal principles.

Then, when we look closer at these designs, we find that ideas such as adaptive behavior and unstable interaction patterns have their direct equivalents in the engineering world. For example, your radio set is equipped with feedback circuits in order to track possible drift in the transmission frequencies of your local radio stations. It will take corrective action so that your radio stays in tune. That is an example where feedback is used in the design to create adaptive behavior in your radio set.

## **Cycles in society**

We grow, mature and get older. Then, we keep bumping into these experiences where we say to ourselves: I have seen this before, but with different people, different buildings, different times, different locations, yet the same basic issues.

The longer we are around in this world, the more we recognize the cyclic nature of many complex patterns in our society.

Every cycle is a unique expression of its time, as is evident in the ever changing but recurring styles of fashion. These complex patterns can take many years to make full circle and while we are in it, we tend to be more focused on the unique experience of the moment.

Nevertheless, at moments when we take distance from the immediate scene and reflect on the wider perspectives, these larger patterns and their cyclic nature become more easy to recognize.

Since they are cyclic, transcending the uniqueness of the moment, there is a hint that something more fundamental is at work. In other words, we peel off the layer that makes it unique and we must be finding something that carries it from cycle to cycle.

Indeed, what carries it from cycle to cycle are interaction patterns with adaptive loops. We can be certain about it now by simply checking all the alternatives in the previous picture. Clearly, from the three alternatives, only the adaptive loop survives.

Thus:

**Cycles in society are complex adaptive loops.**

In summary, we find adaptive loops and life, adaptive loops and things, adaptive loops and cycles in society. Adaptive loops coming back in different forms, across boundaries of life, things and time. This would suggest that adaptive loops are at the foundation of all our experiences. While it is merely a hint at this stage, the idea is too profound to be simply ignored.

Indeed, by simply replacing the word adaptive loops with the word cycles, there is a resounding echo coming to us from the oriental philosophies. According to these philosophies, everything is cyclic.

For instance, the well-known ancient Chinese symbol of T'ai-chi T'u or 'Diagram of the Supreme Ultimate', is a beautiful illustration of the cyclic nature seen at the foundation of our existence. Its name leaves little room for doubt. It is about everything.



The two colors in this symbol are representing the notion of Yang and Yin, push and pull, give and take, in a continuous cyclic movement. The two dots inside the opposites symbolize the idea that each time one of the two forces reaches an extreme, it contains in itself already the seed of its opposite. A magnificent way to express the notion of cycles.

## **A bold move**

Now, turning West, can we find confirmation for these ideas?

Yes and no.

Starting with the yes, there are promising new theories in contemporary sciences where these ideas of cycles and adaptive loops are recurring. Because they appear in different fields of science, they are often obscured by different names.

For instance, there is a remarkable parallel to a theory of subatomic particles, called the bootstrap model, as advocated by Geoffrey Chew at Berkeley<sup>3</sup>. The theory is based on viewing everything as a process (interaction patterns) and the notion that the process is driven by a fundamental principle called self-consistency (adaptive loops).

In chemistry, there are interesting parallels with the notion of hyper cycles. In essence, these hyper cycles are formed by hierarchies of adaptive loops. Thus, interaction patterns where we find loops within loops, within loops, and so on.

There is the notion of autopoiesis, from the Greek for self-production, in biology. A system is autopoietic when there is self-renewal (adaptive loops), as in a biological cell, where molecules are replaced without losing the identity as a cell.

Moreover, physicists used to believe that non-equilibrium states do not contain any interesting physical information. These states were treated as a temporary disturbance of equilibrium, rather than as a source of something new.

This changed with the work of Ilya Prigogine, Nobel laureate for chemistry, who pursued the idea that non-equilibrium may be a source of order and organization<sup>4</sup>. This new ordering principle, simply stated, says that there is order through fluctuation. Again, we find the notion of adaptive loops at the foundation of these processes.

It is also useful to lift our eyesight and view the long shadow cast on our contemporary thinking by Charles Darwin and his theory of evolution. Standing tall, despite constant attacks, is Darwin's idea of adaptive behavior (adaptive loops) in his theory of evolution. Many biologists and micro-biologists are still embracing his theories as the way to explain evolution.

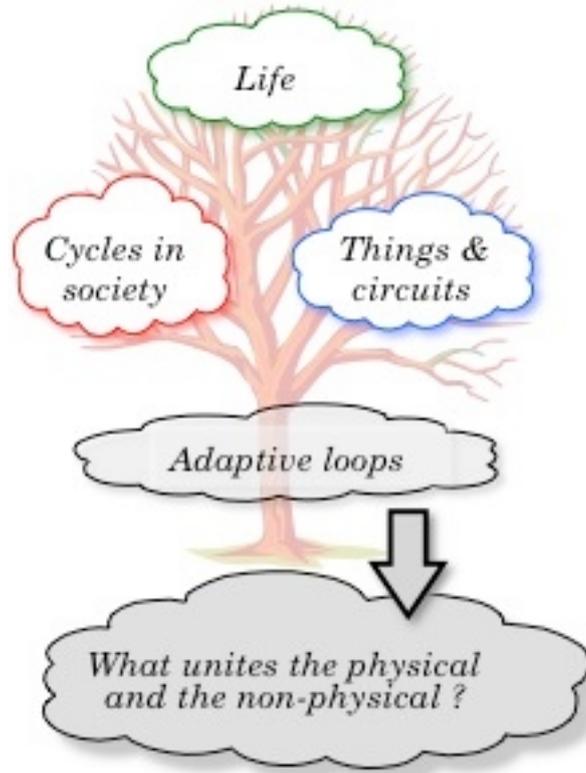
Unfortunately, there is a tremendous hidden assumption about the fundamental nature of adaptive loops, because in many thought processes it is assumed that adaptive loops can only exist in the physical domain.

As a consequence, our existence is often explained as a bunch of cells organized in super structures, held together through chemical processes. Hence, when the cells die it is 'puff and over'. There is no place for a logical counter argument in such a mental model unless we recognize this tremendous hidden assumption about the adaptive loops.

Yet, the previous examples are suggesting that the creation of loops may not be limited to physical structures alone. Indeed, it suggests a possible existence of self-organization and structure in addition to the presence of pure physical organizing structures.

It is an idea that might be uncomfortable at first since it involves a paradigm shift in thinking. But then lets keep in mind that while paradigms help us to make sense of the world, they also trap or constrain our thinking.

Do we have a choice after viewing the evidence summarized in the diagram below?



What is there to learn about adaptive loops that is so fundamental, apparently transcending everything? We shall discover in the next chapter.

At this stage, I am reminded of the well known story about two bricklayers. The first one, when asked what he was doing, answered: "I am laying bricks". The second one, when asked the same question, answered: "I am building a cathedral".

We are building new ideas in philosophy and loops are one of our basic building blocks. Once we understand the origin of loops, it is hoped, we will discover a path that leads to new insights on the universe and our place in it.

End of chapter 4

## **Chapter 5**

### **On the trail of loops**

- ★ **The loop generator**
- ★ **The loops explosion**
- ★ **Universal loops**
- ★ **From Creative-R to self-organization**

*'Today the network of relationships linking the human race to itself and to the rest of the biosphere is so complex that all aspects affect all others to an extraordinary degree. Someone should be studying the whole system, however crudely that has to be done, because no gluing together of partial studies of a complex nonlinear system can give a good idea of the behavior of the whole.'*

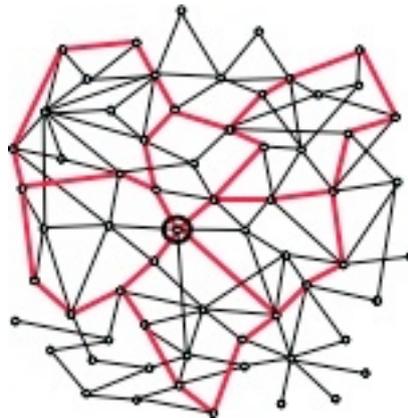
*Murray Gell-Mann  
1969 Nobel Laureate for physics*

## The loop generator

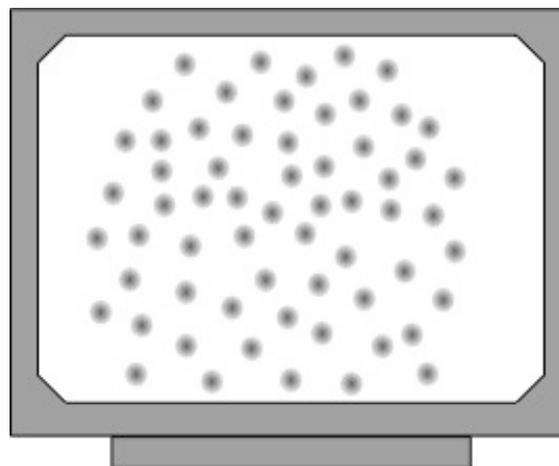
We know by now that the world is full of loops. Yet, how did they get there?

We shall be running a simple thought experiment and imagine some modest tools at our disposal for the design of a model with which we can create loops.

The first step is a return to the interaction pattern produced during the library tour.

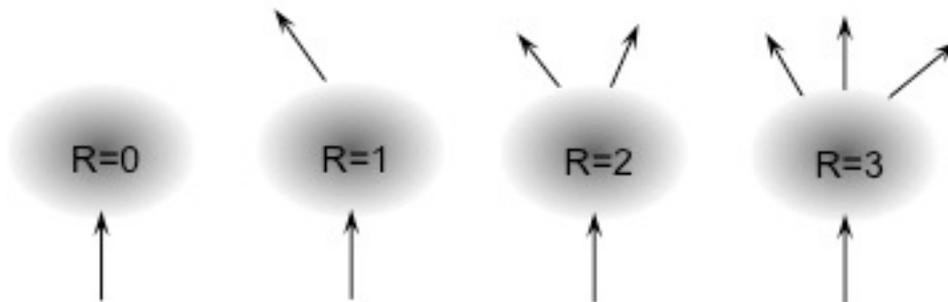


We duplicate the pattern of nodes on our computer screen and eliminate all the interactions from that pattern. So, what is left is a field of nodes in random positions. As is illustrated below.



The random nature of this pattern is significant since it leads to maximum interconnectedness. A high potential for interconnections is important for the creation of loops.

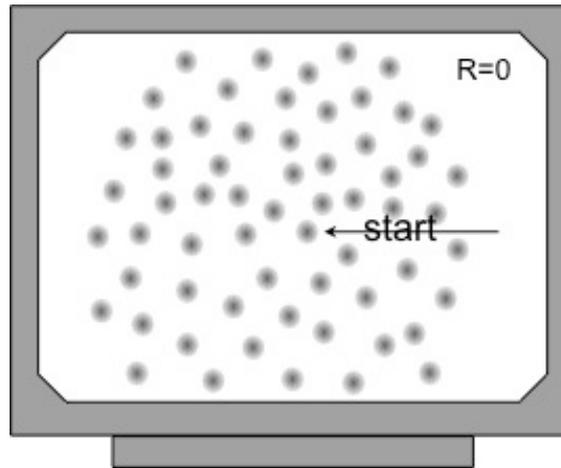
Next, we introduce nodes that have a certain dynamic response to incoming interactions. There are four examples given in the following picture.



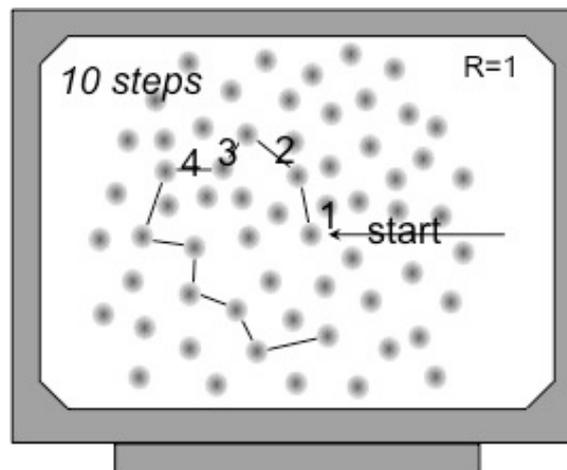
For instance, the node type on the far left, with  $R=0$ , will not react at all to any incoming interactions. Whereas the node type on the far right in the picture, with  $R=3$ , will produce three outgoing interactions when the node is hit by an interaction. Like shoots going out in different random directions.

Imagine some software by which we can set the field of nodes on the computer display to a certain response level. Thus enabling, for instance, four experiments where the entire field of nodes are set subsequently at  $R=0$ ,  $R=1$ ,  $R=2$  etc. Each experiment starts from the center of the field by hitting a node with an interaction.

We start with a field of nodes where the response level is set to  $R=0$ . While this field will produce no reactions, it is nevertheless a valuable reference, as we shall see.

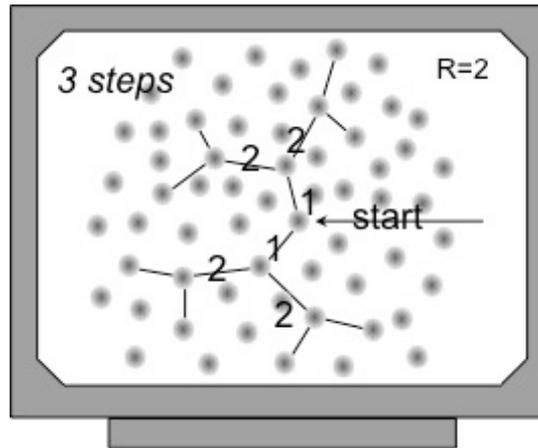


In the next experiment the field of nodes is set to a response level of  $R=1$ . The unfolding events are followed step by step and go like this: After the first hit in the center, that node will produce a reaction in a random direction. It will eventually hit another node, somewhere (if the field is dense enough). In step two, the second node produces a reaction in a random direction and will hit another node, somewhere. And so on. After ten such steps a pattern evolves that is not unlike the picture below.

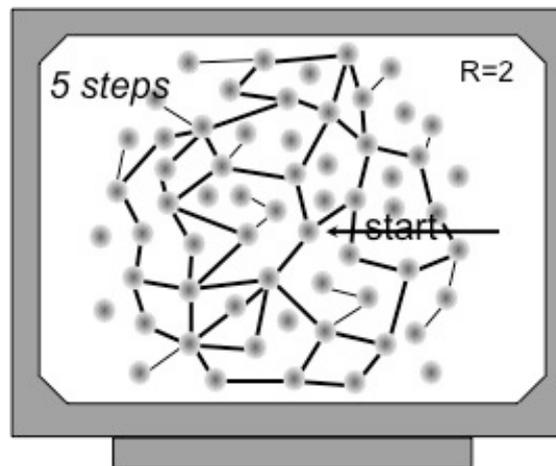


A number of such trials, with  $R=1$ , will produce occasional loops, sometimes two, sometimes none. On average, approximately one.

In the next experiment the node response level is set to  $R=2$ . In order to illustrate the evolving pattern we run it first for just three steps, as shown below. Hence, after each new step the number of new interactions is doubled.



If we continue up to five steps, as is illustrated in the picture below, two highly interesting developments are starting to occur: First, we see a rapid increase in the number of interactions created. Second, loops will start to appear at a rate that is even higher. The number of loops increase very rapidly because we get loops within loops, within loops etc. In order to bring out the loops, they are drawn in heavy lines in the drawing below.

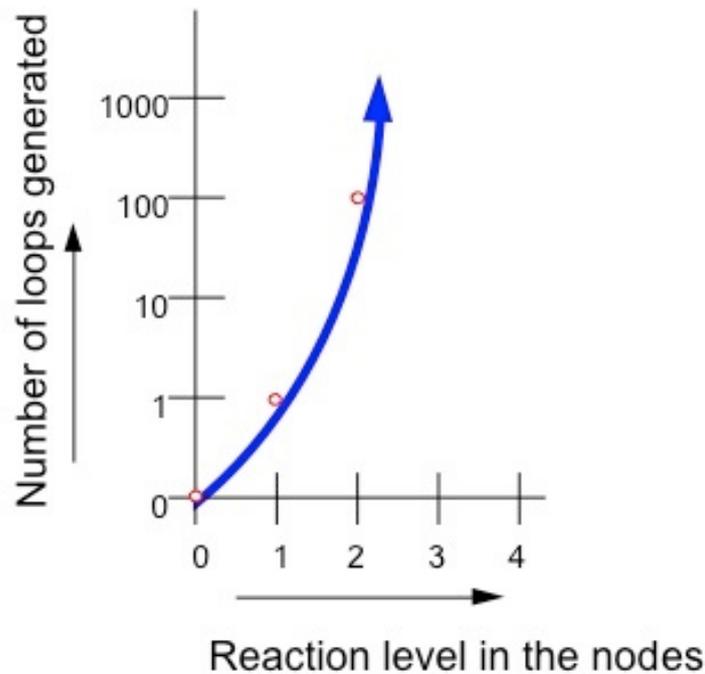


A small field of one hundred nodes will produce typically well above one hundred loops after the full ten steps, at a node response level of two.

### The loops explosion

The production of loops will rise even quicker when the reaction levels move above two. We can see this by taking the results of the trials and plotting them out as a graph.

This plot is based on a fitting curve of the three previous results obtained after ten steps.



As the graph illustrates, we can expect a very rapid expansion of loops when the reaction levels rise above two.

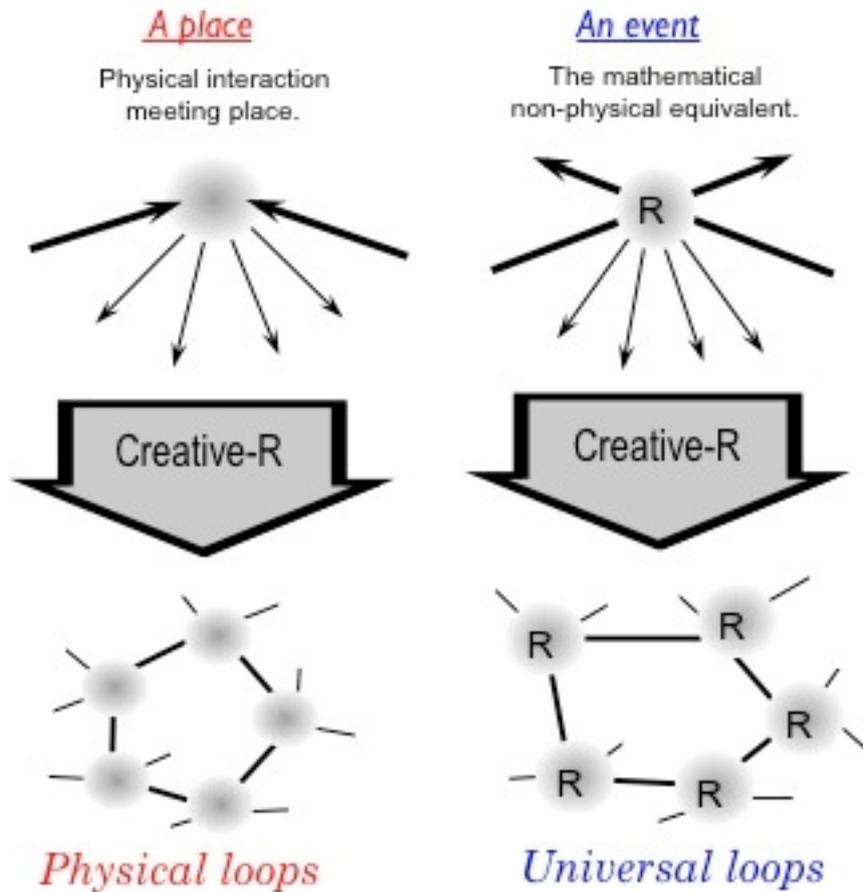
At first sight, this graph has the appearance of an explosion when the reaction levels move above two. In reality it illustrates an incredible acceleration in the production of loops and that creates an incredible potential for loops with adaptive behavior, the source of life, organization, cycles, structure and so many other things we see around us.

At closer examination, the actual mechanism through which these loops are created is virtually independent of physical structure. The actual creation of loops depends merely on the reaction levels  $R$  of the nodes. This is an important property and we shall refer to it as Creative- $R$ , which symbolizes the unique attribute that leads inevitably to the creation of loops.

## Universal loops

An exciting development occurs when this loop generator is stripped from all its physical aspects and turned into a loop generator that can operate independent of physical constraints. Thus, transcending the physical boundaries which are traditionally associated with the ideas of loops and adaptive loops. This is easy, since the nodes will do an adequate job by merely serving as an approximate 'meeting place' for interactions,

with no need for exactness. Clearly, the essential property for the creation of loops is the dynamic response Creative-R, when interactions meet. This process is illustrated in the diagram following.



Is the location important? Not really, as long as two interactions cross, no matter where, and create new interactions as a result of it. There is no need for mass or any other spatial properties. Likewise for energy, the total amount of energy moving in can be made identical to all energy going out. Therefore, all the physical aspects of the nodes can be stripped away without affecting the essential loop-generating capacity, leaving Creative-R.

This Creative-R property is depicted in the universal looping pattern in the previous illustration by the encircled R, representing the dynamic reaction level property of the nodes.

Physical looping patterns can now be seen as one form of expression for universal looping patterns. Thus, universal looping patterns can

transcend the physical and non-physical boundaries, enabling an integrated system approach to embrace all our experiences.

## **From Creative-R to self-organization**

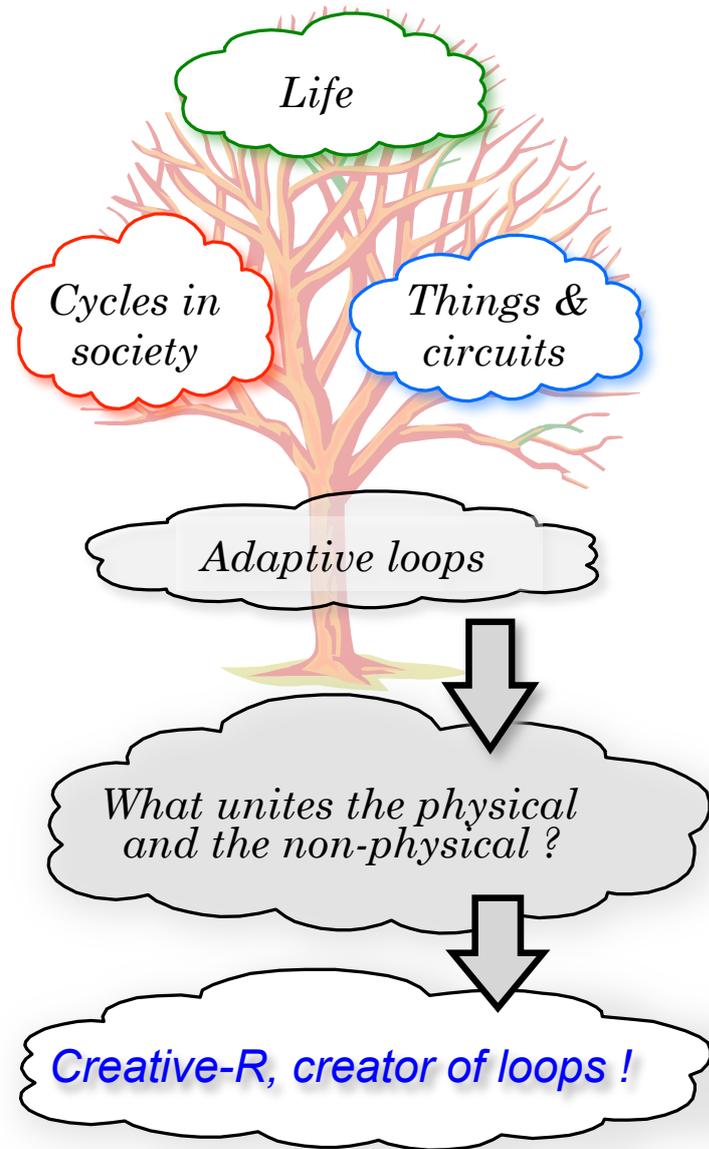
We have just unmasked a most significant hidden assumption, because the loop generator is not dependent on material form. It will have far reaching consequences for our mental models on reality and this is why: The universal loop generator is highly prolific and can expand freely through the creation of its own 'nodes' (more on this in the next chapters) by virtue of a high Creative-R. The dynamic nature of these evolving looping patterns leads then to 'variation' and ultimately to 'selection'. We have arrived hereby at important fundamentals of self-organization, which are universal in nature, not restricted to time and space. The growth and evolution of the Internet (cyberspace) is a good example of this.

Applied now to Darwinian theories of evolution, it will illustrate the need for a fundamental rethinking of prior assumptions, since most evolution theories evolve along the arrow of time in the physical domain. However, knowing that adaptive loops, organization and structure can evolve as well in a non-physical sense, we should keep an open mind for the possibility of additional dimensions to evolution. The universal looping patterns are clearly manifested in the fundamentals from which evolutionary theories are derived, yet in themselves are broader. Thus, looking through the lens of Darwinian evolution theories we can be easily fooled through its masking effect on the universal fundamentals of self-organization.

### ***In summary:***

***The innate nature of adaptive loops is independent of material form and consequently, the resulting structures from it, such as organization, evolution, intelligence, meaning and awareness are to be seen as universal in their basic potential, unless proven otherwise.***

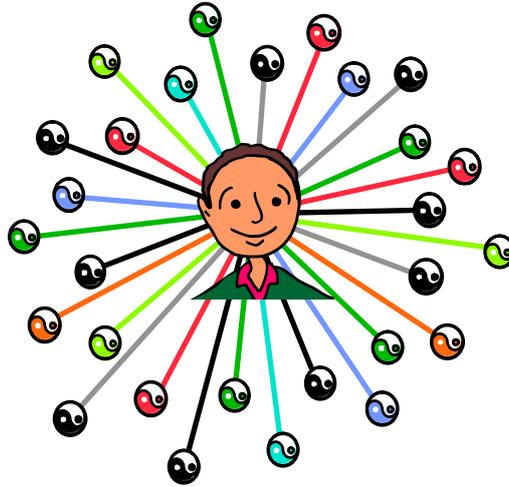
We have laid the groundwork for the second part of the book, which will take us back to real world considerations, in particular the question of 'the origin of mind'. As we shall see, the notion of Creative-R will play a vital role in our explorations.



End of chapter 5

## **Highlights from part one:**

- ✓ *Interactions are universal, omnipresent, not limited by space, time, physical or non-physical boundaries.*
- ✓ *Focused study leads to the discovery of ever more interactions. Wide probes lead to the discovery of ever more loop forming patterns. The combined pattern is sometimes called 'the web of life'.*
- ✓ *At the foundation of the 'web of life' are loop forming patterns, in particular adaptive loops.*
- ✓ *Adaptive loops are found in physical and non-physical phenomena.*
- ✓ *The recreation of loops, in a small model, leads to one unique contributor, Creative-R.*
- ✓ *Creative-R is very prolific and is not limited to the "space-time dynamic order".*
- ✓ *Creative-R is at the foundation of universal loops, transcending the physical and non-physical.*



## Part Two

# When LOTA unfolds

*'The most incomprehensible thing about the world is that it is comprehensible'*

*Albert Einstein*

## When LOTA unfolds

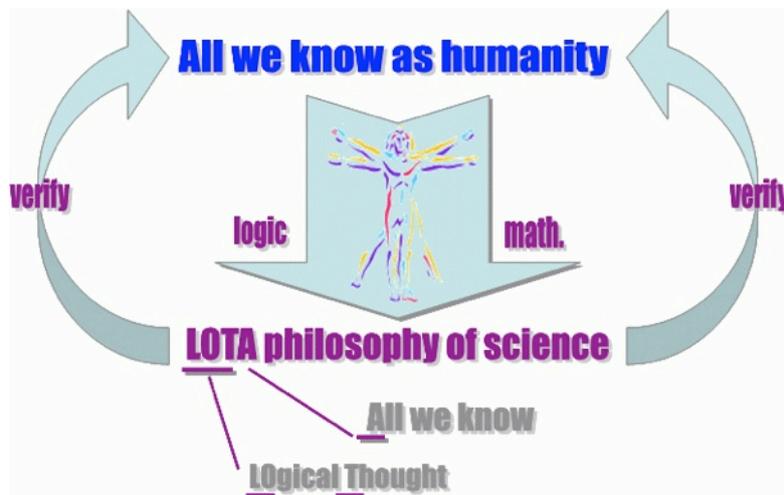
A tremendous acceleration of events takes place in part two of this book. We shall see the amazing unity from which all known sciences appear to spring. We will discover the actual origin of consciousness, new insights in the nature of time and the ultimate nature of energy. We will discover the Universe Grand Design as the dynamics from which all our experiences emerge.

Nevertheless, we will remain focussed on the central target, namely the process disclosing the real origin of our minds. It is an insight that leads to one of the greatest treasures of all, namely an awareness of the sources of our latent creative powers, waiting to be tapped.

There is so much new in these propositions and it needs a name. I selected LOTA, a short word, neutral, easy to remember, traveling well across cultures and languages.

In the print editions it is referred to as an acronym for **L**ogic **O**f **T**he **A**tom, since the ultimate dynamic from which matter arises is consciousness. A logic which has escaped most of physics, even today. In the coming chapters you will be introduced to the processes leading to these results. The essence is a mental process, supported by some sheets of paper and a pen.

On the websites LOTA is referred to as an acronym for **L**ogical **T**hought about **A**ll we know. This is currently my preference because it brings out better the dynamic processes leading to these results, as illustrated below.



This eBook version has the benefit of 15 years hindsight following the first printed version published in 1996. The real test for a theory is its ability to withstand logical attacks and conflicting evidence over a long period of time. The LOTA philosophy of science is standing up unscratched after these 15 years. Its logical reasoning has stood the test of many smart people over the years. There is a constant watch for possible conflicting evidence and none has turned up so far.

Thankful readers have referred to it as “the most comprehensive and intuitive Theory of Everything in existence”.

While it makes a quantum jump in bringing about a unification of understanding, the real essence of LOTA is a process. Consequently new evidence can flow into the process. The current outcome is open ended and multi-dimensional, which implies that our understanding will be one limited way of looking at reality, like a slice through a multi-dimensional cake.

Meanwhile, is LOTA what readers claim it to be?

Who knows?

Time will tell when we discover its boundaries.

There is an open challenge invitation on the internet at [www.slenters.ch/challenge](http://www.slenters.ch/challenge) if you are interested.

If you merely wish to enjoy a good read, here is my advise: Read Breakthrough several times and then reread the chapters which are still confusing. The book is called Breakthrough because it involves many paradigm shifts. Yes you are still smart if you need to read it several times. The fact that you are interested says enough.

Enjoy part two.

## **Chapter 6**

### **Launching-pad for a new vision**

- ★ **A metaphor**
- ★ **Patterns of reality**
- ★ **A universe of motion**
- ★ **Multiple universes, why not?**

*The death of dogma is the birth of reality.*

*Immanuel Kant*

## **A metaphor**

What if you slept,  
And what if in your sleep you dreamed,  
And what if in your dream you went to heaven,  
And then plucked a strange and beautiful flower,  
And what if when you awoke,  
You had the flower in your hand.  
Ah!  
What then!

These famous lines by S.T. Coleridge are an interesting metaphor to describe universal looping patterns. Ah, what then, because there is nothing in the basic nature of universal looping patterns that stops it from happening. Yet of course, it is not typical of the way we experience reality.

To illustrate the goal for this chapter, we shall take this metaphor a little further: Suppose you look in fascination at this beautiful flower and you discover a diamond in the center of it. This diamond is radiating its colors in a fashion you have never seen before and with every turn to a new surface you seem to gain an entire new perspective on reality. Now the diamond communicates with you and conveys to you that it represents Creative-R. Then it tells you that the discovery of Creative-R is a great step forward, but as a people we have to learn first how to use it.

Then it offers you three insights in order to get started. With your strong sense for realism, you made the following three choices:

First, you want a demonstration that this Creative-R concept is for real in the world in which we live.

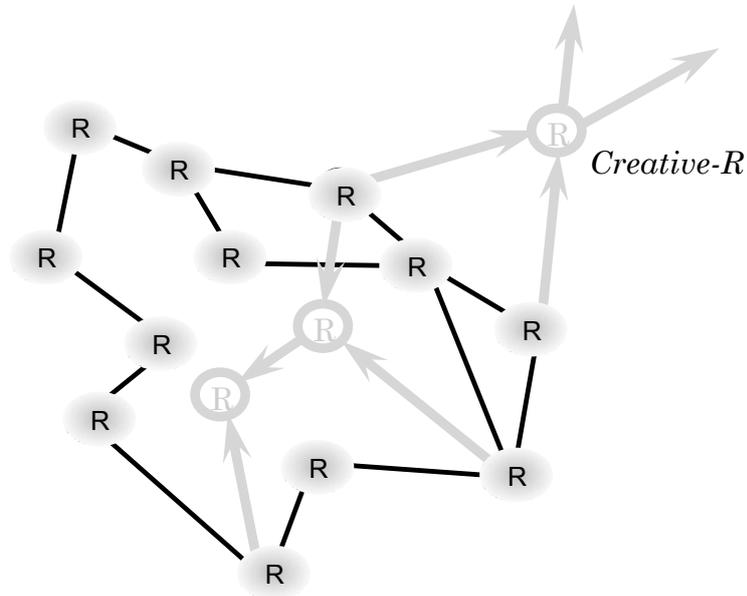
Second, you want Creative-R to give you an insight that will put you on a fast track.

Third, you want an indication as to how fundamental Creative-R actually is.

This is the end of the metaphor, we shall now turn in earnest to the exploration of the three questions raised.

## Q1 - Patterns of reality

Universal looping patterns have a tremendous potential to grow and unfold. This is best illustrated with a picture:



A fraction of an original looping pattern is drawn in black in this illustration. The evolving pattern is drawn in thick grey lines. This pattern will unfold with every new step. Hence, a direct result of the basic property of Creative-R, creating new interactions whenever old interactions meet.

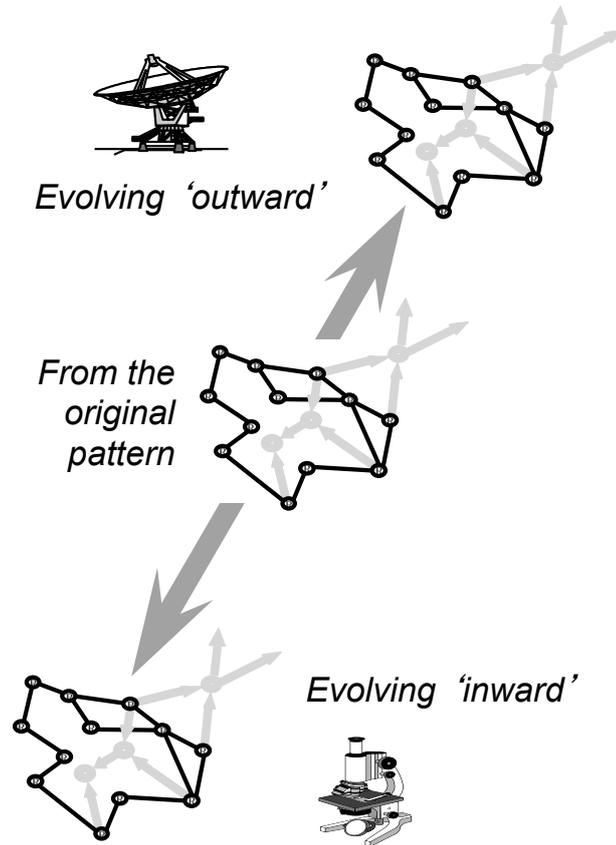
These evolving patterns will then build loops, which unfold both inwards and outwards. Looking inward, after many steps, there is a trend towards ever greater density on ever smaller scales. Likewise, looking outwards, there is an evolution of ever larger patterns and circles, with every new step.

Suppose we look at the evolving pattern after one billion steps have passed, with the help of some magnifying devices. That is, we focus in the center and start zooming in with our magnifying device on a small area. This pattern will then have the same look and feel as the original pattern, but on smaller scale. We can repeat this exercise countless times and find the same results over and over, at ever smaller scales.

The same is true when we look outwards. By enlarging our horizons of observation at ever larger scales we will find ever larger patterns, yet with the same look and feel. As is illustrated on the next page.

This overall emerging pattern, scaling inwards and outwards, will be called the Great Scaling Pattern. It is merely a mathematical prediction now

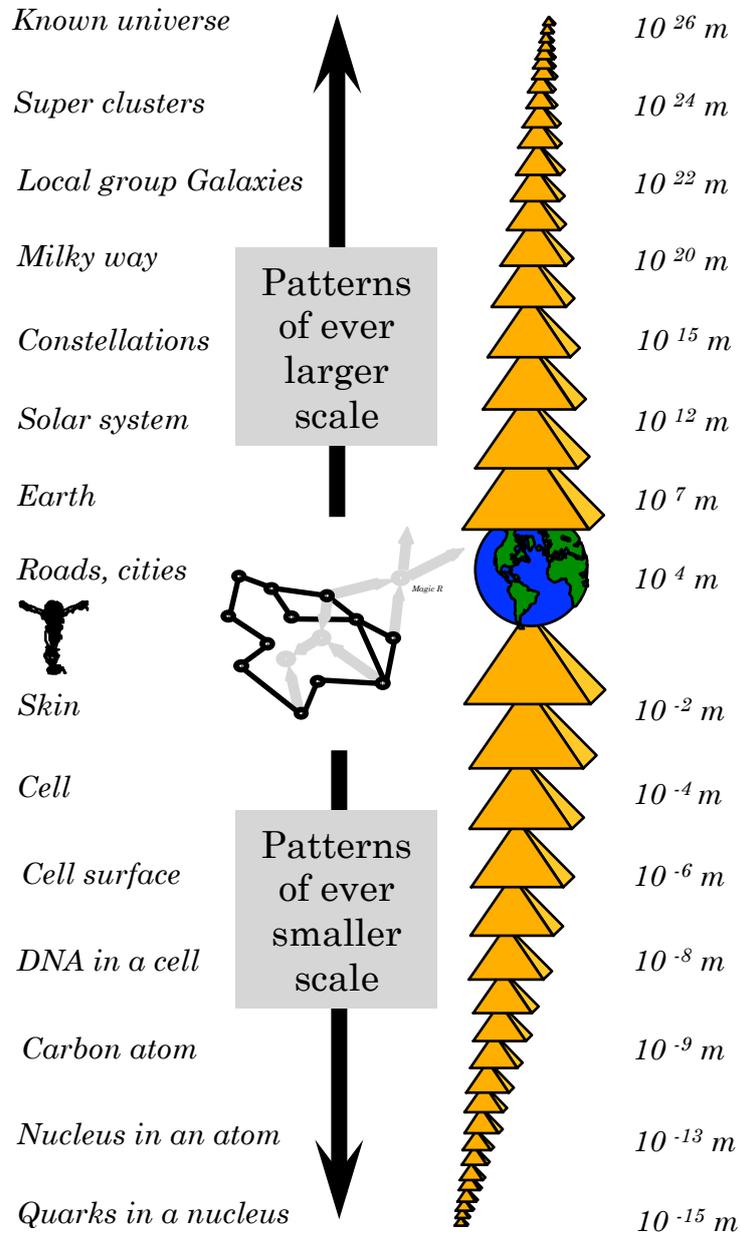
for what we should be finding in reality. In the physical domain it might appear as perceptions of large and small. However, in general, it can transcend the physical and non-physical domains.



With this picture in mind, it is surprisingly easy to find examples in every day life. Such as in galaxies, the stars, road maps, the patterns in our skin (even the wrinkles), a picture of a complex molecule, or a close-up picture of the DNA double helix. Obviously, these patterns have the same look and feel to it, with loops within loops. Moreover, these examples scale throughout the universe from the very large, such as galaxies, to the very small, such as DNA. Paying attention to it for a few weeks will make you aware of its omni-presence.

This is illustrated on the next page with the scaling model of our physical universe. The person at the center of the diagram is depicting our normal level of observation, thus the way we might see another person. Every pyramid downwards is a smaller scale, by a factor ten. After fifteen pyramids of scaling downwards, we arrive at the smallest levels known to mankind, the sub particles of atoms.

Similarly by moving upwards, every pyramid is a new scale of observation of ten times larger size. After twenty-six pyramids, we arrive at the estimated outer dimensions of the universe.



***In short, the entire physical universe demonstrates a striking similarity with the mathematical predictions of the Great Scaling Pattern.***

However, nature is also full with examples where the Great Scaling Pattern is actually hidden within the shapes of things.

There is a whole class of these examples immediately available from the science of chaos, as we shall see.

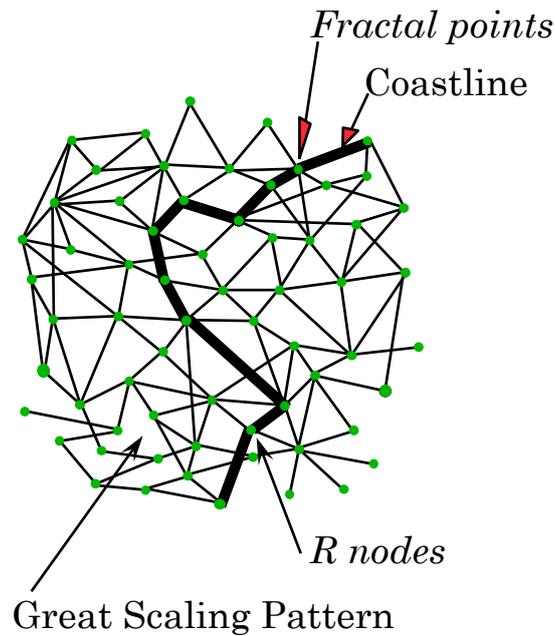
The ruggedness of a coastline for instance. It is remarkably constant, having the same look and feel, no matter from which height we look at it. Or the ruggedness of a rock, a feature often used by movie makers to create the impression of large scale with the help of small scale models. Because nature is full of them, some scientists became suspicious about viewing ruggedness simply as a deviation from a straight line.

Maybe, they said, the real language of nature is hidden in the ruggedness of these shapes. Working back from this regularity in ruggedness, a whole new field of science emerged, which is known as the science of chaos. One of the pioneers in this field is Benoit Mandelbrot, who developed a technique to describe this ruggedness with mathematical precision<sup>5</sup>. The technique is based on the notion of fractals. With fractals one can simulate the shapes of mountains, coastlines, trees, flowers, leaves, and so on. It is the basic technique used in several popular software packages for Personal Computer users where you can design your own shapes of nature. Fractals are also at the foundation of these beautiful colorful scaling patterns known as 'Mandelbrot set'.

Now, these chaos patterns resulting from these fractals are in actuality a manifestation of the Great Scaling Pattern. Indeed, chaos patterns reveal merely a fraction of the underlying Great Scaling Pattern.

Whenever there are fractals and chaos patterns, there is a deeper story to be told by the Great Scaling Pattern.

This is illustrated in the following example of a coastline:



Imagine for a moment this picture representing a rugged terrain stretching from high to low, where all water is removed. This terrain, without the water, is then a three dimensional Great Scaling Pattern. Now, imagine the coastline after the water has returned. The visible border between land and water, the coastline, illustrated by the heavy black line in the picture, is the part made up from fractals. Whereas the deeper Great Scaling Pattern has disappeared from vision.

This is an example in the physical domain. However, these underlying looping patterns are truly universal in their basic nature, transcending the physical and non-physical. Indeed, they can be behind our entire spectrum of experience.

This includes then all our thoughts and emotions, our inner feelings and dreams, our sense for space and time. In short, we might find that all aspects of our physical and non-physical experiences are based on relationships that are governed by the basic dynamics behind the evolution of this Great Scaling Pattern. In short, there are strong indicators to suggest that:

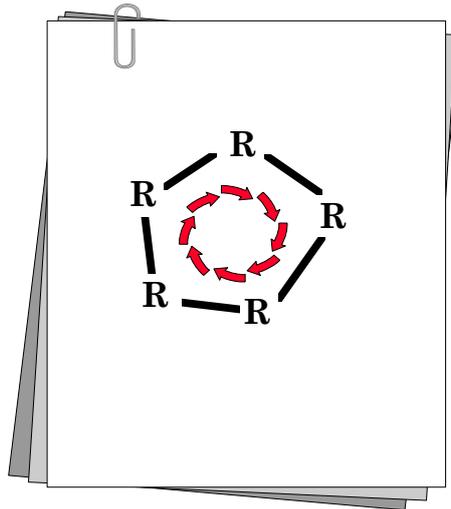
***The Great Scaling Pattern***

***is the ultimate pattern behind all our experiences.***

Time will tell, when data from other researchers will be available. In my personal experience with the pattern, I have yet to find an exception.

## Q2 - A universe of motion

The model of the universal looping pattern, with Creative-R, delivered with power and conviction in its first real world test. With renewed fascination I made a drawing of it in its simplest form, which I stuck on the wall in my office. This drawing is copied here:



From time to time I would look at it and ponder over its deeper meanings. This is as close to a view on the innate nature of our universe as I have ever seen. What is it telling us about the universe?

Gradually, this simple drawing started to tell its story. It is a story, so fascinating and overwhelming, that it will require another paradigm shift in our thinking.

From this simple form, possibly because of it, there was this undeniable truth staring me in the face. This pattern can only exist when it is **dynamic**.

Yes, it has to **renew itself** constantly, otherwise it will cease to exist.

Consequently:

***The innate nature of our universe should be viewed as motion.***

You have most likely heard similar statements before about the dynamic nature of the universe. Hence, why bother this time around, since it is not clear what difference it would make.

However, as it turns out, if this idea of motion is taken seriously, then our ideas about time are affected in a very fundamental way. Even the appearance of a stable object, such as a table in a room, is then not so natural anymore.

Indeed, the effect of motion is so profound, it leads to an entire new understanding of space and time. Moreover, with your benefit of foresight, it is a fast track towards the ultimate goal.

Therefore, it is worthwhile after all.

In order to appreciate why it is normally overlooked, we should return for a moment to our teenage years:

Our western way of thinking is greatly influenced by the Newtonian classical laws of mechanics, the type of mechanics we learn at school, referred to as classical mechanics. It starts with the notion of objects at rest. Then we learn how we can make an object move by putting energy into it, for instance by pushing it with a finger.

Then we learn to calculate speed and acceleration, with formulas that start from objects at rest. All this seems to make good sense because it is highly consistent with the way we perceive the physical world that surrounds us.

However, there is a fundamental discrepancy between this way of looking at the world, starting from objects at rest, and the actual innate character of the universe which is based on **motion**. Therefore, our orientation in classical mechanics should be seen as a fundamental obstacle when it comes to gaining a deeper understanding of the universe.

Roger Penrose, one of the most prominent mathematicians of our times, arrived at a similar conclusion via another method and summarized this way<sup>6</sup>: *'Classical mechanics cannot actually be true of our world'*

Indeed, we find this confirmed when we turn our attention to a different system of mechanics, where the starting reference is **motion**. It is known under the name of Hamiltonian mechanics and was invented in the 19th century by the versatile and original Irish mathematician William Rowan Hamilton.

It is admired among scientists who know it because it does a much better job in integrating other theories, such as the theories of electromagnetism. In addition, it serves as the starting off point for the 20th

century theories of quantum mechanics in the field of particle physics. Moreover, the classical mechanics we learn at school are fitting nicely within this broader umbrella of the Hamiltonian mechanics.

In short, by shifting the primary focus to **motion**, there are many more aspects of nature falling into place. Moreover, by truly acting on this knowledge, there is a deeper understanding of space and time to be gained. In turn, this will put us on a fast track for bright new insights on the origin of our minds.

### **Q3 - Multiple universes, why not?**

These new insights create also opportunities for advances on the third question. Hence, how 'deep' is Creative-R ?

If Creative-R can spin off into the great transcendental scaling pattern that is at the foundation of our universe, is our universe then unique? Or, if we put the question different, is Creative-R so fundamental that it could also lead to other universes?

What is a universe? My science friends agree on this description: A universe is an entity where the laws are uniform. For example, in our universe, it is assumed that the physical law about the speed of light is valid throughout the universe, hence uniform.

Therefore, in principle, there is a potential for different universes to exist, based on different sets of uniform laws. For instance, we could then imagine another universe where the laws about the speed of light are different from our universe.

Where are these physical laws then? Under normal circumstances, that question is extremely difficult to answer.

Within the context of Creative-R and the Great Scaling Pattern, the answer is surprisingly evident: Physical laws are manifested when interactions meet and create other interactions. Therefore, they are manifested through Creative-R.

Consequently, Creative-R is to be considered as more fundamental than the physical laws of the universe. A high Creative-R, with different physical laws, can then indeed lead to other universes.

That makes Creative-R so fundamental that it is to be seen as part of the supreme ultimate force originating our own universe and beyond, which will be referred to as The Source of all that is.

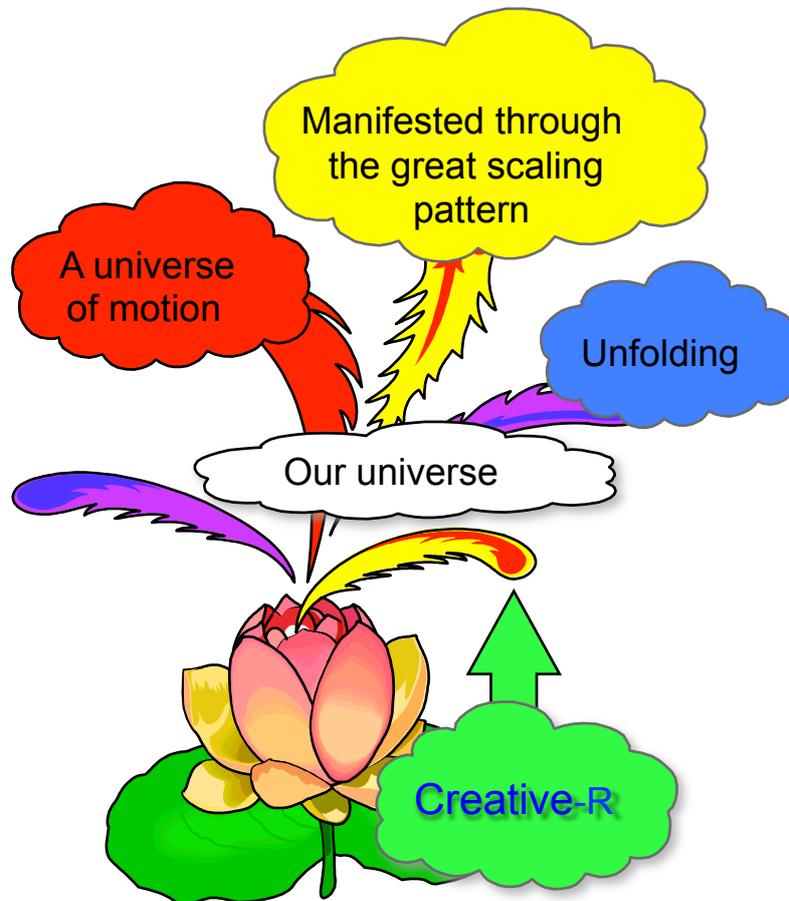
In short:

***Creative-R is beyond all things, even beyond the universe. It is a glimpse at The Source of all that is.***

Returning to the metaphorical rose who offered these three insights, she delivered with majestic splendor:

- The Great Scaling Pattern, as a test of reality.
- The universe of **motion** as a deep insight.
- Creative-R even beyond the universe.

These three major insights shall serve as the launch-pad for a new framework of understanding, as is illustrated in the following diagram.



End of chapter 6

## **Chapter 7**

### **Space, time and beyond**

- ★ **Space and the inner world**
- ★ **A new vision**
- ★ **The ultimate energy fountain**
- ★ **End of a myth**
- ★ **Time, a revolution of thought**

*What needs to be explained is not change, as common sense would have it, but the appearance of stability.*

*Heraclitus (540-480 B.C.)*

## **Space and the inner world**

For a long time, space was viewed as something that is external to us, an externally defined 'something', a common space where we live in and move about.

This idea has started to erode during the second half of the 20th century as a result of research findings in the fields of physics, human vision and psychology. From these results, it appears as if we create our own individual impressions of space.

That point of view creates a fundamental philosophical problem. Because, if we create our own individual impressions of space, from where then does it all start?

Early scientific evidence of something deeper than space came from results in particle physics, in particular through the theories of quantum mechanics.

These theories point to a deeper reality, of instantaneous interconnectedness, as a stage prior to the actual emergence of matter. In scientific terms, it is known as the non-locality of quantum objects. This is quite a mouthful and we shall refer to this deeper reality as the domain of:

### ***inter-space.***

Inter-space is therefore non-physical. Because it is the domain of instantaneous connectedness, it is not limited by the Einsteinian speed limits. Therefore, it should be seen as everywhere, interwoven with the space-time dynamic order, yet not a part of it.

The philosophical consequences of these quantum mechanics theories were enormous so the debate continued for decades, till technology had sufficiently advanced for actual experimental confirmation. Then in 1982, physicists Alain Aspect, Jean Dalibard and Gérard Roger of the Institute of Optics at the University of Paris successfully demonstrated that inter-space is for real<sup>7</sup>. Thus, inter-space is a scientifically confirmed part of our present reality.

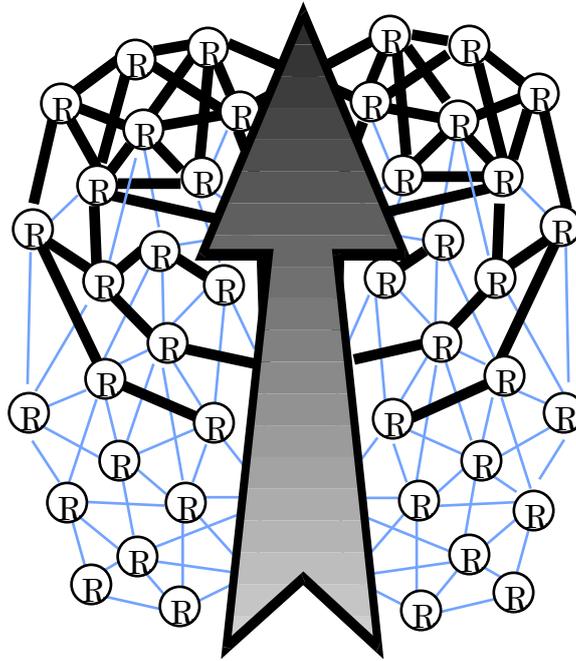
With the help of the Great Scaling Pattern, we can now create a new philosophical framework where the notions of physical domain, non-physical domain, space and inter-space are blended together into one holistic continuum. This is graphically illustrated on the next page.

The entire continuum is made up by the Great Scaling Pattern, which as we know is transcendental. Therefore, organization and structure can exist in both domains, the non-physical and physical. Furthermore they may exist in infinite combinations of both, when looping patterns evolve across this transcendental continuum.

The lower end of the diagram is representing the non-physical domain, inter-space, characterized by the non-physical interactions, which are drawn in thin lines. The looping patterns can evolve naturally in this domain when there is a high Creative-R. Hence, organization and structure can very well evolve there without the aid of physical structure. Moreover, we can move instantly from pattern to pattern, because there are no speed limits, and distance is not a factor.

*The physical domain*

*Space*



*Inter-space*

*The non-physical domain*

*The Great Scaling Pattern leads to a continuum that includes the physical and non-physical domains, space and inter-space. This continuum provides a new philosophical framework, which is consistent with major 20th century scientific theories, with eastern philosophies, major themes in religion and with major themes from mysticism.*

At the top end of the diagram is the physical domain, characterized by the physical interactions, which are drawn in thick lines. These interactions are constrained by inertia and the speed limits at which physical objects can move. Here we cannot move instantly from pattern to pattern, because we are limited by speed. As a result, there is the notion of distance creeping in. Indeed, the greater the jump from pattern to pattern,

the more distance we perceive. Moreover, with the notion of distance comes also the notion of space.

Scientists who operate exclusively in the physical domain, as a research policy, are likely to find adequate looping patterns in this immense complexity, to support whatever it is they are looking for. To extend such findings as an 'interpretation of reality' is something else.

It makes all the difference, because where matter is created, there are links with the non-physical domain, the domain of inter-space. They are like roots in inter-space, from where the material world evolves.

The actual nature of these roots has divided science into several camps for decades. This division of opinion can be illustrated here with the help of the diagram on the previous page.

For instance, if these roots from inter-space are viewed as just random, then it leads to a world view based on randomness (uncertainty principle).

If, on the other hand, we recognize that these roots come from looping patterns in inter-space, which have already formed organization and structure, then this leads to an entirely different world view.

The diagram of the Great Scaling Pattern just presented treats the physical and non-physical domains, space and inter-space, as an interwoven network of organized relationships. These relationships form a continuum with possible graduations from highly non-physical to highly physical organization.

Practitioners of meditation techniques, such as in Tao and Yoga, will be able to relate to this very well. Through these techniques we learn to look inwards. Initially, these techniques bring us into contact with physical layers of our awareness. Gradually though, the discovery leads to deeper layers and along with it we seem to be moving to layers that are ever more non-physical in nature.

The far reaching implications from these different viewpoints are illustrated by the following example in healthcare:

Most of our health care in the western hemisphere is based on the principles of classical medicine as taught at medical schools.

These principles are ultimately based on models originating from biology and chemistry, which in turn are based on models originating from physics. However, the ideas that ripple through the chain from physics to medicine, are ultimately based on the interpretation of matter as having roots into inter-space that are of a random nature. As a result, our mind is

explained as a bunch a neurons that have emerged from the evolution of the physical body and our thoughts are seen as a result of body activity.

If we reverse the process and start from our understanding that roots in the non-physical domain are already organized, we can make this rippling effect also work the other way by moving through the chain from physics to chemistry, biology and medicine. No longer will our thoughts be treated as a biological by-product. Rather, our thoughts will move center stage and be seen as an important source for maintaining good overall health.

## A new vision

This notion of the *Great Scaling Pattern* with the *space* and *inter-space* is exciting and it certainly triggered a host of new questions on my part. For one, it had my mind racing on a whole bunch of questions related to energy. It led to a paradigm shift in my views and the easiest way to follow this shift is by simply replaying the questions that flashed by:

A pattern of **motion**,

and it is motion that is not dependent on the physical domain.

What does that mean?

Motion is energy.

Energy is the potential to change something from one state to another.

But it is independent from the physical domain.

Even stronger, this pattern can unfold faster in *inter-space*.

Then, why does the physical domain even exist?

Of course, Eureka!

The existence of the physical domain only makes sense when it results from energy slowing down.

Our physical reality, the space-time dynamic order, is the result of **energy from inter-space slowing down!**

What else can it be?

The alternative of equal energy levels between space and inter-space makes no sense because both domains would then be the same in appearance.

The alternative of lower energy levels in inter-space makes no sense either. Because it is at the high end of the energy spectrum where matter is created with the help of the roots coming from inter-space.

Therefore, we are left with the third alternative, an inter-space that has higher energy levels than the physical domain.

This idea of energy slowing down, why is it such a strange idea?

Am I stuck again by hidden assumptions?

Maybe,

indeed the discoveries of cosmic rays are pointing in that direction:

Cosmic rays are reaching our earth from distant places in the universe, with energy levels many times higher than what we can reproduce on earth in the most powerful particle accelerators. Yet, despite this high energy, which we might think makes detection easy, they were only discovered during the 20th century<sup>4</sup>.

We know about these cosmic rays because they collide with atoms high up in the atmosphere where they produce secondary particle showers and these can be observed by various detectors on earth.

Some of these rays almost escape attention altogether, since they are extremely difficult to detect, such as those representing Neutrinos. The wavelengths of these rays are extremely small and they perceive the entire earth as mostly empty space. Similar to our perception of empty space when we look up in the sky. As a result, they pass right through the earth most of the time, without hitting anything on the way. And when they do not hit anything on the way, then they pass completely unnoticed, as if they simply do not exist.

In short,

***super high energy levels can easily bypass our detection devices, giving the appearance as if they do not exist.***

Therefore, since we cannot detect these super high energy levels, this notion of energy slowing down is a hypothesis worth checking out.

## **The ultimate energy fountain**

The arguments in favor of energy slowing down come from three different approaches, all leading to the same basic idea. Namely the notion

that the ultimate energy fountain is in inter-space and that our physical reality is the actual result of this energy slowing down. We shall start this time with the report from a mystic and then blend it with supporting evidence from the field of physics.

The report is from Emanuel Swedenborg, born in 1688, sometimes described as the Leonardo da Vinci of his era <sup>8</sup>: In his early years, he studied science and he was the leading mathematician in Sweden. He was talented in many fields and filled almost twenty volumes with his experiences. He meditated regularly, and when he reached middle age, developed the ability to enter deep trances during which he left his body and visited what appeared to him to be 'heaven' and conversed with 'angels' and 'spirits'.

Swedenborg believed that despite its ghostlike and ephemeral qualities, heaven is actually a more fundamental level of reality than our own physical world.

It is, he said, the archetypal source from which all earthly forms originated, and to which all forms return.

In addition, he believed that the afterlife realm and physical reality are different in degree but not in kind, and that the material world is just a frozen version of the thought-built reality of heaven.

According to Swedenborg, the matter that comprises both heaven and earth 'flows in by stages' from the Divine, becoming coarser and hazier at each new stage, while it becomes slower, more viscous and colder.

In contrast, we shall now move from this mystic experience of the inner world to the views of a contemporary physicist, David Bohm († 1993). He is one of the most eloquent thinkers of our times on the philosophical implications of particle physics and the theory of relativity <sup>9</sup>.

The question of **energy**, in what we have called inter-space, has played an important role in his life and the summary here is an accumulation of his ideas developed over many years:

Bohm reasons that there is a finite limit to gravity and distance when we go smaller and smaller, much like a quantum, beyond which the whole notion of space fades out into something that is at present unspecifiable.

He explains that this length is estimated as  $10^{-33}$  cm (32 zero's behind the decimal point and then a one). This is much shorter than anything so far probed in physical experiments, which are down to  $10^{-17}$  cm.

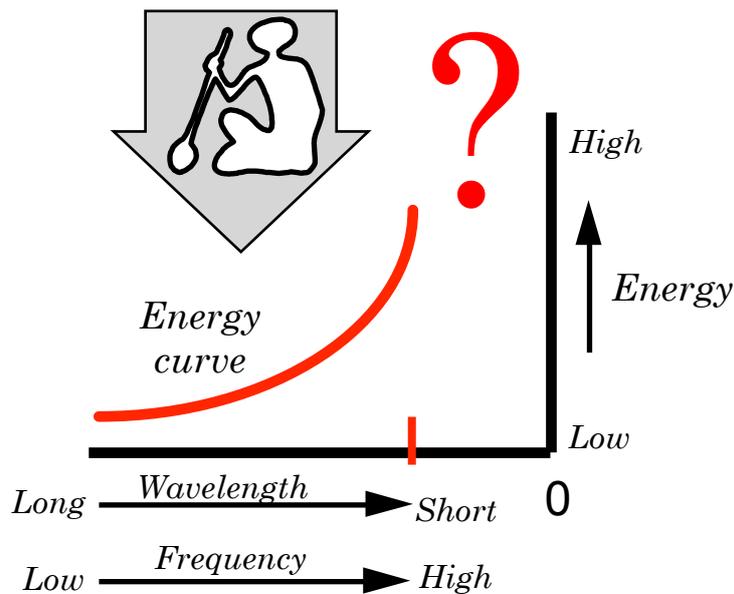
If one computes the amount of energy that would be in one cubic centimeter of space, with this shortest possible wavelength, it turns out to be far beyond the total energy of all the matter in the known universe.

What this implies, Bohm explains, is that the so-called empty space (inter-space) contains an immense background of energy, and that matter, as we know it, is just a small quantized wave-like excitation on top of this background, rather like a tiny ripple on a vast sea.

There is a third argument in favor of inter-space as the ultimate energy fountain, which is best illustrated with an energy picture of the entire physical spectrum of the universe. This method is neither dependent on personal mystical experience, nor on the advice of an expert, it can be verified by the reader through easy accessible information. Indeed, we can come to these results by taking a rather unconventional look at the energy spectrum of the universe which you will find copied many times over in physics books. Our own version of it is on the next page.

The energy curve in the picture, drawn on the left, represents the physical domain, symbolized by the figure stirring the food. Along the horizontal bar, under the curve, are the waves that make up our entire physical spectrum. Starting from the very low frequencies on the left, such as the movement of planets, to the super high frequencies on the right, such as the very rapid oscillations in atoms.

If we start on the horizontal bar under the energy curve from the left and move through the various frequencies towards the right, we will encounter mechanical vibrations, sound, radio waves, micro waves, heat, the light spectrum, x-ray and so on.



What makes each of these frequencies unique is the actual energy that was put into them originally to cause their vibration. The actual energy contained in each of these waves is indicated along the vertical bar on the right.

Since energy is the potential to change something from one state to another, we can see how energy can cascade downward, from the right towards the left. This is energy that splits up, through Creative-R, into ever lower frequencies, moving from the right towards the left.

However, there is a gap to the right of this energy curve, because there is a physical limit to the shortness of these wavelengths. Therefore, a logical entry point into the physical domain is high energy moving from inter-space, the non-physical domain represented by the large question mark on the right of the curve.

This super high energy in inter-space is part of the Great Scaling Pattern continuum consisting of universal looping patterns. Hence we are looking again at energy slowing down from inter-space from where our physical reality emerges.

## **End of a myth**

The energy curve is rising steeply in the region dominated by very small dimensions, the research field of particle physics, dealing with particles in the size order of  $10^{-16}$  cm.

On first sight, the idea of energy moving from the non-physical to the physical domain, from Inter-space to space, seems to violate the preservation of energy principle.

A principle epitomized by Einstein's famous formula:

$$E=MC^2 \quad (\text{the only concession on formulas})$$

However, the field of particle physics, the very small, is also the field of incredibly fast events taking place at very short time intervals, where scientists have discovered that when they make snapshots of particles at extremely short time intervals, shorter than  $10^{-15}$  seconds, the conservation of energy principle is no longer true<sup>10</sup>. Indeed, for the actual moment to moment situation there are deviations, even though the average over a longer period is not affected.

Therefore, there is energy and information moving across the boundaries between the physical and non-physical domains, between inter-space and space, at these very short time intervals.

While these intervals are short, they are nevertheless highly significant, because this process is ongoing, affecting every particle, billions of times each second.

In short, the space-time dynamic order is highly permeable in the region of the very small and very fast.

Indeed, that region in the Great Scaling Pattern where the physical domain of space has its roots in the non-physical domain of inter-space.

Consequently, we can view the physical and non-physical domains no longer as separate.

It is the end of a myth!

Logic and evidence suggest now a different tune:

***The separate worlds of the physical and non-physical are just an illusion. We are all part of one integrated transcendental system, the Great Scaling Pattern, full of organization and energy, where the physical domain of space unfolds from the non-physical domain of inter-space, through energy and information transfer.***

This is a new ballgame, because the links between the physical domain and the deeper origin of our reality, the non-physical domain, can be ignored no longer. From the logical evidence presented so far, it suggests potential sources of intelligence right within each one of us, which go deeper than the material world. These sources are linked to inter-space, the ultimate energy fountain, where organization, intelligence and structure can unfold faster than in the physical domain. Therefore, by tuning in to them, we have the potential to access sources of energy and intelligence beyond imagination.

In short, we are making progress towards an understanding of the origin of our minds. Nevertheless, I felt that it was better to push on till the evidence is overwhelming and comes from several directions.

Given the new insights, the questions surrounding the nature of 'time' present themselves as a natural consequence.

What is time?

I searched the literature for satisfactory explanations and did not find it. Can we pursue the ultimate target without an understanding of the nature of time?

It affects every minute of our waking life. In addition, these discoveries of the Great Scaling Pattern, the universe of motion, the ultimate energy fountain and inter-space have created an entirely new ball game.

So, a closer look at the nature of time seems inevitable.

## **Time, a revolution of thought**

Is time continuous, like water flowing in a river or is it actually discontinuous, made of little chunks?

From the way our thoughts are conditioned in our early years, the overwhelming response to these two alternatives will be a vote in favor of looking at time as something continuous.

But suppose it is not?

Ah!

What then?

Let us start with a quick review of the typical way we learn about time in our formative years and then compare notes with what we know:

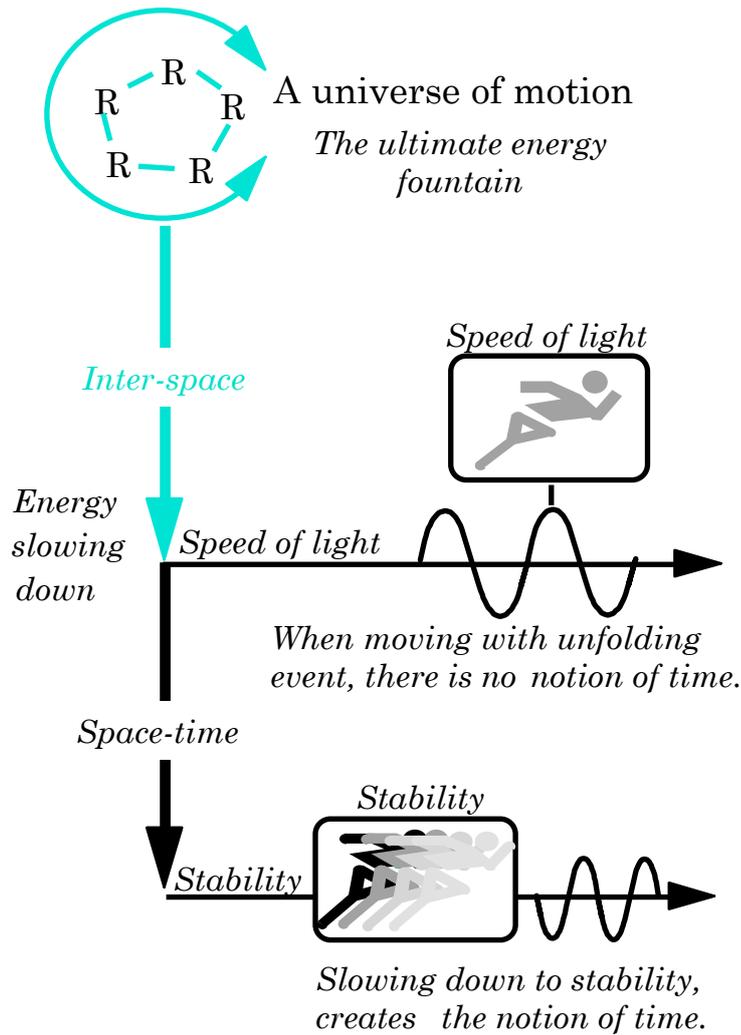
In our childhood, we become aware of the basic notions of day and night. Later, we learn about the planets, the sun, the moon and how they govern the cycles of the day, the months and the seasons. Then, we learn about the great mathematicians and scientists of the past, plus the mathematical tools they developed to calculate these cycles.

These tools are continuous in character and because they lead to excellent results, they are rarely questioned. Consequently, we think of these cycles as a smooth continuous process.

However, as seen earlier, these cycles are made of looping interaction patterns. Indeed, they are formed from a great number of discrete events. Therefore, while we perceive them as continuous, at the origin they are really made from many small discrete interactions. This discrepancy causes no problem in every day practical situations, yet for a deeper understanding of our reality it matters a great deal. Is it then little chunks after all? Too early to say.

Therefore, we will start from the ultimate energy fountain, build a scenario for the unfolding space-time dynamic order and watch the notion of 'time', as it unfolds:

Imagine you are in inter-space and you are watching this process of energy slowing down till it actually unfolds into the space-time dynamic order. This is illustrated in the diagram on the next page, which we will use as an aid during the discussion.



The process starts right at the top of the diagram, depicting a universe of motion, with the ultimate energy fountain in inter-space. When some of this energy slows down, it will follow the flow downwards along the left axis.

In inter-space there is the super-high motion, a part of which slows down to the speed of light and then it continues to slow down till it reaches what we perceive as a state of stability. Halfway down the vertical axis, at the speed of light, is the beginning of the space-time dynamic order. This is where motion unfolds into the dimensions of space and time, the lower zone in the diagram.

That is quite contrary to our intuitions, because we express motion (speed) all the time with the help of distance and time. As we say, this car can do 200 km per hour. However, with motion (speed) at the origin, we have to reverse our thinking.

At the speed of light, the beginning of the space-time dynamic order, there is no notion of time. The actual notion of time, the arrow of time, will only start to appear from there on, when motion slows down further. To illustrate this effect, here is a brief experiment:

Suppose, you have a television set in front of you that is tuned to your local TV station. You are equipped with a fantastic rocket that brings you up to the speed of light and you are now traveling away from your local TV station at this speed, with the TV screen in front of you. (While we can do this in our thoughts, physical reality would keep us from doing this because of the growing mass when we approach the speed of light.)

The signal from your local TV station radiates ever larger circles, like waves radiating when you throw a stone in the water, and you are now able to keep up with the crest of one of these waves.

While your television set is still tuned in, what will there be on the screen? According to the theory of relativity, the screen will show one stable picture, permanently, a snapshot of one short event now frozen in time, and the notion of time will have disappeared.

In short, by traveling along with the dynamic propagation of the event, the dimension of 'time' has disappeared.

Now, if you are in inter-space watching this and other events unfold, you can actually jump instantly back and forth from event to event and you are not bound by the arrow of time.

Back in the rocket, bound again by the space-time dynamic order, imagine your rocket to slow down till it lands in the proximity of your TV station. This is now a state of stability because your relationships to your surroundings, such as the earth, TV station or local town, are stable.

Watching intently the screen of your TV set, while the rocket slows down to this state of stability, you observe the following: The initial stable image on your screen, at the speed of light, starts to be replaced by other images at an ever faster pace. Then having reached ground, stability, your TV screen has this normal look again of events flashing by in rapid fashion.

The signal from the local TV station is now passing by at an incredible speed and we can sense the arrow of time again, perceiving *time* as an irreversible phenomenon. This is illustrated in the lower portion of the diagram.

The whole process just witnessed inside the *space-time dynamic order* is quite consistent with the *theory of relativity*, which deals with the relationships between *time* and *space* within the

space-time boundaries. So that part appears consistent with the new framework.

However, there is still something that is **not** consistent (namely these little chunks, these discrete steps from interaction patterns) because the theory of relativity is a linear theory and assumes that time and space are **continuous** in their basic nature. Based on the current insights, it appears that the theory of relativity is glossing over the deeper discontinuous origin of time.

We know already from David Bohm that there is a limit to the *smallness of space*, a limit to distance. There is also a maximum limit to the speed at which this minimum distance can be travelled, namely the speed of light. Therefore, when we calculate the time interval involved for the crossing of the smallest possible space at the highest possible speed, we come to the smallest possible unit of time. In other words, when we make time intervals shorter and shorter, there will be a limit **below** which time does **not** exist. When this is calculated, we come to the approximate number for the smallest possible unit of time as  $10^{-44}$  seconds.

This is far shorter than our current capabilities for the measurement of time and in practical life we do not have to worry about it.

However, it is the principle behind our notion of time that is profoundly affected, because it means that time is **not** continuous. Clearly, this brings up a whole host of questions for which we have no answers.

Yet, in a very general sense, it appears that we perceive time in the form of samples, .... a beat, .... discrete events or something like it. It also means that we are somehow, again in a very general sense, directly or indirectly, involved in the sampling business. Hence, we perceive things as a result of samples or snapshots from dynamic unfolding events.

While these results are surprising, they seem to make good sense. For instance, the theory of relativity and quantum theory, which are currently at odds, would gain greater consistency.

However, our real interests are in the philosophical implications of these exciting developments. They are clearly very profound, because from this incredible amount of information coming towards us at rates that are far beyond our physical capacity, we have to be actively involved in filtering or choosing from it.

Clearly, the ones involved in this **choosing** are you and me. With our consciousness and awareness we are somehow intricately linked into this incredible process.

In short, when we think of time, it is no longer the river flowing by, which we can watch as a passive bystander. No, we experience time because, somehow we are actively involved in the creation of this experience,

***by making choices.***

We have moved magically from the wide world of physics to the fascinating world of psychology, with questions of perception, focus, awareness and consciousness taking center stage.

Indeed, it is this magical transition from physics to psychology that sets us on a fast track towards our ultimate goal: to discover the origin of our creative minds.

Nevertheless, there is nothing conventional about the way we will get there and an occasional peek at the flowchart in the rear of the book is a good technique to assure a continued feel for the 'red thread'.

End of chapter 7

## **Chapter 8**

### **Interconnectedness**

- ★ **On a path to magic**
- ★ **Tuning-in to Creative-R**
- ★ **Actions return a thousand times**
- ★ **Transformation of virtual magic**
- ★ **Identity at large**
- ★ **Patterns of wholeness**

*It is one of the most beautiful compensations of this life that no man can sincerely try to help another without helping himself.*

*Ralph Waldo Emerson*

## On a path to magic

*Two roads diverged in a wood,  
and I took the one less traveled by,  
and that has made all the difference.*

*Robert Frost*

While working on this heady stuff of space and time in the last chapter, I kept looking for some practical way to test the actual level of Creative-R in the universe. It set me on a path that is indeed very little travelled and I discovered virtual magic on my way.

I will try my best to share this magic and fascination with you, as it now hides behind this simple title of interconnectedness. Maybe you are disappointed that the title is not about consciousness, awareness, focus or something like it, as you might expect after the ending in the previous chapter.

Well, that is part of the magic. By the time we have finished this chapter, who can tell the difference?

Moreover, it is a path that leads us to the gate of the ultimate objective: to discover the real origin of our minds.

## Tuning-in to Creative-R

The actual level of Creative-R in the real universe is a question still unanswered.

Is there some way to make an estimation of it?

The easiest part appears to be the physical domain, which is where I started. My choice of estimation technique is based on following the energy as it cascades down through the energy spectrum of the physical universe. However, we shall focus here on the actual results. The details of the technique are described in the Backstage section called **Meet Hi Energy**. It is background information and is not needed for the discussion that follows. Since the big surprises are in the actual **results**.

As you might recall, Creative-R will start to produce large quantities of loops when the reaction levels are at two or above. The big surprise is this: The actual 'real universe' results show Creative-R levels that are at least an order of magnitude higher than the minimum required for the creation of loops, structure and organization.

This is absolutely baffling. Why would these levels be so much higher than the minimum required level of two? Why does our physical universe, the space-time dynamic order, have a Creative-R that is so much greater than what is required for the evolution of organization and structure in it?

After all, Creative-R does not need the space-time dynamic order to unfold since it can do this more quickly at the higher energy levels, outside the space-time dynamic order.

This high Creative-R in our physical world, is it a manifestation of something deeper?

Can the high Creative-R reveal the secrets behind this cleverly disguised physical reality of ours?

We shall start by taking the “end of a myth” results as a base and view the apparent separate domains of the physical and non-physical as just an illusion. If it is wrong, we can correct. If it is right, we have gained.

Moreover, we shall return to the familiar small laboratory pattern of the one hundred nodes and ask:

What story will it tell us about the innate nature of our world, physical and non-physical, if it is tuned to the music of the high Creative-R? What will it say about the deep patterns so cleverly hidden behind our every day reality?

## **Actions return a thousand times**

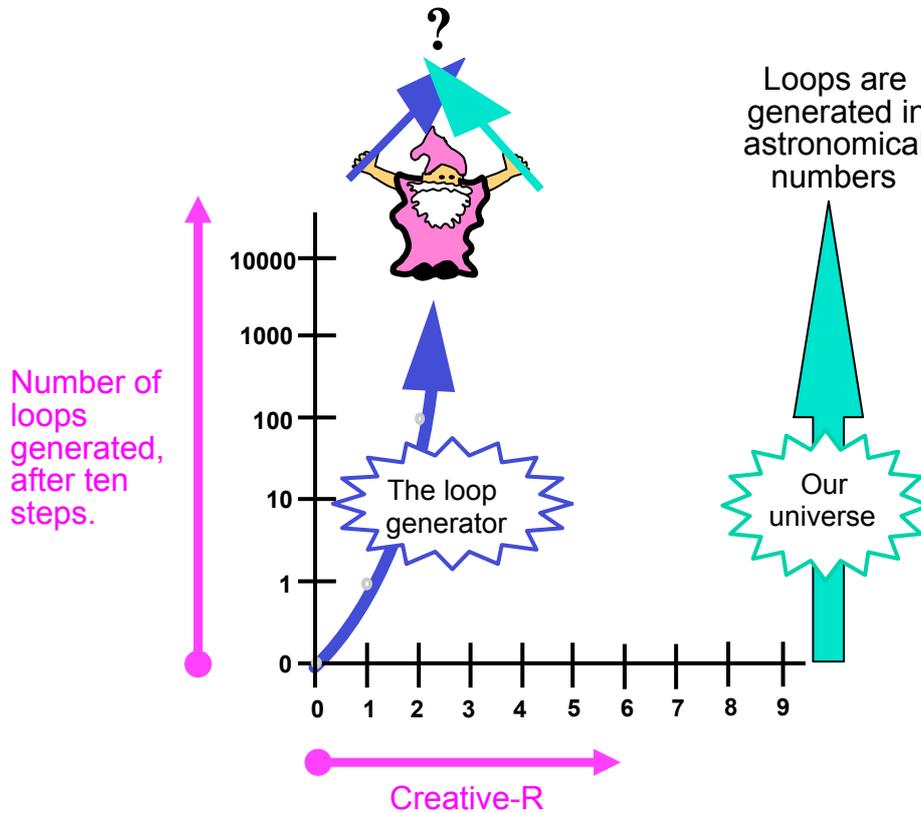
Not only is the actual Creative-R in the physical universe many times larger than two, it is also many times larger than ten. So, we can take the level ten as a good representative level in the experiments without pushing the limits of reality.

What happens when we tune this small pattern to this high Creative-R level and let it run for merely ten steps?

It simply goes off the chart!

Creating a quantity of loops that is way beyond our capacity to estimate. Even after just ten steps.

The dramatic results are illustrated in this chart:



*The loop generator simulating the creation of loops in the universe.*

*The high level of the Creative-R found in the universe is simulated in the small laboratory pattern of approximately one hundred nodes, leading to astronomical numbers of loops, after merely ten steps. The actual number is given by the cross point of the curve on the left and the vertical arrow on the right, clearly far above the paper boundaries of the chart.*

As the little magic man suggests, just follow the scale on the left of the chart upwards till it reaches the point where the curve on the left will cross with the vertical line on the right. That point will give us the equivalent number of loops generated in the universe from a small patch of one hundred nodes, after merely ten steps. Clearly, it does not happen on the paper and it might happen several meters above the paper, resulting in numbers simply beyond estimation.

**Thus by simulating the Creative-R level of the physical universe, we discover astronomical numbers of loops coming from one tiny interaction, after merely ten steps.**

Obviously, this has profound implications:

**Suppose this first interaction was caused by you or me? It then follows that we cannot view ourselves any longer as the spectators of things happening around us. Somehow we are active participants, actors and creators, in the shaping of that reality around us.**

Consequently, the phenomenal expansion of these patterns leads to a level of impact that is far greater than what we perceive in normal circumstances. Somehow this is deeper than our surface perception and this is confirmed in research fields that work at the boundaries of the physical domain. For instance, in the field of particle physics this notion about being an objective disconnected observer is no longer valid.

The eminent American physicist and long time co-worker of Niels Bohr, John Archibald Wheeler, puts it this way <sup>11</sup>:

**The universe does not exist 'out there', independent of us. We are inescapably involved in the bringing about that which appears to be happening. We are not only observers. We are participators. In some strange sense this is a participatory universe.**

We can add a footnote to it:

**It is the result of a high Creative-R level, making us active participants, actors and creators in the reality around us.**

## **Transformation of virtual magic**

This small pattern of one hundred nodes had me now utterly fascinated. After merely ten steps arriving at these countless loops. How does it feel to be a node in all this interconnectedness?

So, I decided to replay the ten steps, starting from zero, with my eyes transfixed on one of these nodes. What transpired from there has branched out into an entire field of investigation.

Let us replay the story.

It is easy; just reset the step counter to zero and start all over again.

After the reset, just keep your eyes on the one node from which you start with the first interaction and remain focused on it for a full ten steps.

Now imagine how each new step is adding very rapidly to the density of interactions with this node. At the end of the ten steps, when you look at it from a close distance, this node will be at the center of millions of interactions.

Not only that, the incredible density of interactions has reached a level where it is quite certain that there is at least one direct interaction from this node to every other node in the patch of the one hundred nodes. Moreover, every node is directly connected with every other node. Indeed, each node appears as a unique center for millions of interactions.

Is that what is happening in our own universe?

How can we tell? There is such a tremendous scaling involved from the size of the model to the size of the universe. (That is, scaling along the axis of space).

However, there is also tremendous scaling along the axis of time, from the ten steps in the model to the countless steps already passed in the universe. Therefore, we might be lucky and see within this model a small-scale representation of what is actually happening in the real universe.

If we reverse our thinking, starting from the small-scale model, watching the model unfold in our imagination along the axis of space and time, we can discover that it is quite realistic.

Because the axis of space unfolds along the three known dimensions, whereas the axis of time unfolds along a tremendously steep exponential curve as a result of the high Creative-R level. Without getting into the details of mathematics, we can be quite certain that the net result of this scaling is a real world interconnectedness that is even higher than what we witnessed in this small pattern.

We take it one level further. Imagine this node to be replaced by the transcendental notion of Creative-R, a meeting place of interactions in the

transcendental sense, which we shall refer to as “my node ®”. Imagine, you are “my node ®”.

The evolving scenario is then like this:

***As “my node ®” you are now at the center of countless interactions, in all directions. Incredible as it may sound, you are directly connected with every other ® in the universe.***

Yet, that is not all. If you take some distance from “my node ®” and observe the emerging pattern surrounding it, then you will discover that each of these interactions are linked into loops. The wider we see, the larger these loops appear to be.

In short,

***you are at the center of countless interactions, directly connected to every other ® in the universe, all forming loops, and you are an active player in each of these loops.***

The identity of “my node ®” is **inseparable** from these interactions and the loops. Moreover, “my node ®” is an active and adaptive contributor to the dynamic maintenance of each of these loops. If not, they will disappear. Somehow, in the process of this magic transformation, action and identity of “my node ®” have become inseparable. Because the identity of “my node ®” is entirely the result of its actions and relationships with its surroundings.

This transformation is absolutely overwhelming; I am out of breath, short of words. So much happening all at once: action, ... awareness, ... identity, ... the Great Scaling Pattern with all in each and each in all, ... a universe of loops, each one forming an aspect of my multi-dimensional existence, where my actions are an inseparable part of the whole.

Needing a break, I turned to the literature in search for authors who could support me with words to capture this majestic panorama <sup>12</sup>:

Scientists from the West:

## Chapter 8 - Interconnectedness

*The world thus appears as a complicated tissue of events, in which connections of different kinds alternate or overlap or combine and thereby determine the texture of the whole.*

*Werner Heisenberg*

*One is led to a new notion of unbroken wholeness, which denies the classical idea of separate and independent existing parts.*

*David Bohm*

*The material universe is seen as a dynamic web of interrelated events. None of the properties of any part of this web is fundamental; they all follow from the properties of the other parts, and the overall consistency of their interrelations determines the structure of the entire web.*

*Geoffrey Chew*

*In the eastern view, as in the view of modern physics, everything in the universe is connected to everything else and no part of it is fundamental. The properties of any part are determined, not by some fundamental law, but by the properties of all the other parts.*

*Fritjof Capra*

### Sages from the East:

*Things derive their being and nature by mutual dependence and are nothing in themselves.*

*Nagajurna*

*The Buddhist does not believe in an independent or separately-existing external world, into whose dynamic forces he could insert himself. The external world and his inner world are for him only two sides of the same fabric, in which the threads of all forces and of all events, of all forms of consciousness and their objects, are woven into an inseparable net of endless, mutually conditioned relations.*

*Lama Anagarika Govinda*

This is exhilarating. So much consistency in the description of the deeper nature of interconnectedness, yet derived at by three entirely different ways. These scientists from the West arrived at their views through experience in the field of particle physics. The sages from the East came to their views through meditation. We arrived at it through interactions, loops and Creative-R.

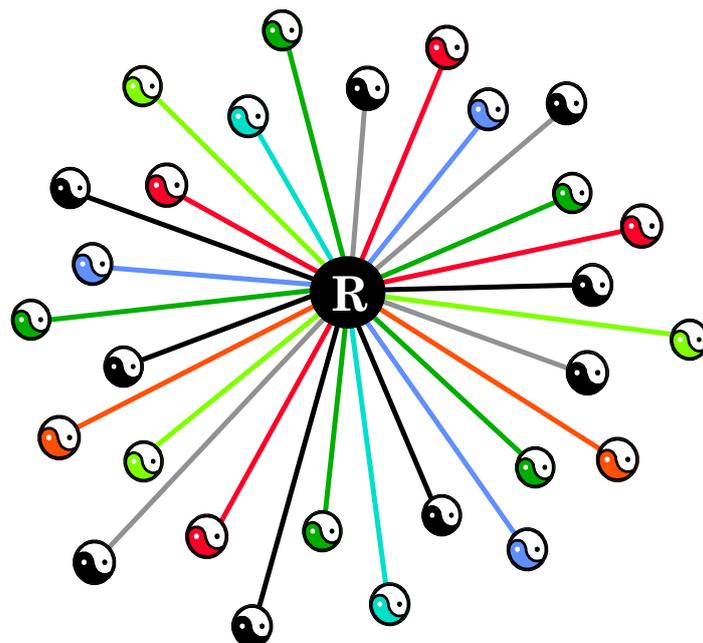
Yet, possibly most precious of all is the revelation gained from witnessing the actual transformation in the laboratory model, because it revealed how actual identity of ® is created through countless loops.

The diagram on the next page attempts to capture these ideas in a visual format. There is a fantastic depth and meaning in this transformation, yet it is difficult to even estimate its broad implication at this stage. Nevertheless, it deserves a name that somehow captures its essence and it will be referred to as the transformation that results in:

### ***Multi-dimensional identity***

At the center of the diagram is node ®, which can represent any ®, including you or me as we shall see shortly. Every node ® is at the center of countless loops. Yet every node ® is also unique within the Great Scaling Pattern, in identity and its contributions.

Used here as 'shorthand' for loops is the cyclic symbol of the Tao. Each of these loops, cycles, contribute to the creation of the multi-dimensional identity of each node ®. Referred to as the multi-dimensional aspects forming the identity of node ®.



***Node ® at the center, after the transformation leading to its multi-dimensional identity.***

***The astounding effect from the transformation that results from a high Creative-R is the creation of a multi-dimensional identity of node ®. Every node is at the center of an incredible density of functionally organized interactions, all operating in loops, where every loop with node ® is forming a specific cyclic aspect of the node ®'s existence. Moreover, in a reciprocal sense, node ® is also an active player within these countless loops.***

Truly, our brains function along the principles of multi-dimensional identity and since it appears to be 'effortless', it often escapes our attention. I encountered a highly significant example of this during my years as training manager, demonstrating not only the principle but also the power when it is put to good use. It is an example about language, illustrating how multi-dimensional identity is embedded in language structure and how it can be applied to overcome communication problems.

The basic challenge was this: how do you train groups of young managers, who come from many different nationalities and whose mother tongue is not English, in the subtleties of management while the class is given in English. The idea was to go for meaning (to which each person could relate to from their own experience) rather than words. Of course, words were important as the common communication tool.

Therefore, we created a multi-dimensional identity for keywords, such as **management** or **leadership**, before we started using them in discussions. Of course, this multi-dimensional identity, this meaning, has to be formed by each individual in relation to their own experience and background. So we used a simple technique with a flip chart, where we placed a keyword, such as **management**, on the top and asked for inputs on associations. After listing some twenty words of associations from the participants, we had built (in essence) a multi-dimensional identity for that key-word, thus the ® in the center of many dimensions.

Now, what is most striking is this:

We trained hundreds of managers in these classes and I can assure you that the discussions were highly interactive. Yet, we never had to go back to the original definitions of keywords, because we had created a thorough understanding about the meaning of these words. Clearly, this meaning can only exist within the context of each individual's experience.

Imagine, fifteen different cultures discussing with each other in a foreign language and having this level of common understanding about the words they use! I knew then that we had hit on something very powerful and I am grateful to be able to bring it as an illustration of multi-dimensional identity.

Yet, why dig so far and deep if multi-dimensional identity is such a fundamental aspect of our lives? We should be able to generate dozens of examples from things around us. While this is true, it requires a different perspective on the world than the one we are typically accustomed to from our upbringing.

Here is an example that is immediate and omnipresent, namely: the physical appearance of human beings. If you are asked to define the physical appearance of human beings in a classical sense, then you might say: two legs, walks straight, two eyes and so on. However, you need to account for all the variations, from small to tall, from young to old, male, female, thick, thin, disabled people, and so forth. After an exhaustive definition you have then something that is still incomplete and still not unique.

Yet when somebody walks towards you in the street with one leg, one arm and an eye patch, you will recognize the person immediately as a human being. Because our mind does not perceive in the classical sense, it perceives in terms of multi-dimensional identity.

Now, if you happen to be a man and the person who is walking towards you has two beautiful breasts and two beautiful legs, then there might be something else happening. Your mind and focus is likely to start shifting in the Great Scaling Pattern. And if you are the woman on the receiving end, you know that the shift in focus has just happened (I have been told).

After this introduction, we move to one of the most baffling developments from multi-dimensional identity, namely its fantastic interplay with the Great Scaling Pattern, or *identity at large*.

## **Identity at large**

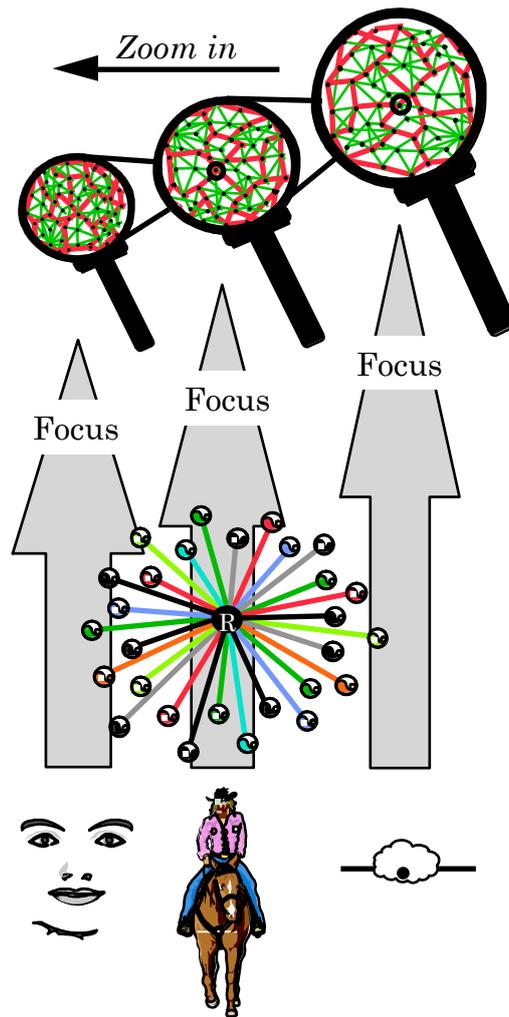
Imagine, you wake up one morning in a friendly small hotel surrounded by wide open spaces, the open prairies of the Midwest in the USA. You walk outside and see the rising sun on the eastern horizon, you feel the first rays of sun in your face and you admire the beautiful coloring of the sky.

Then towards the West, at far distance, you see this small cloud of dust on the horizon and in the center of it appears a dark dot. You cannot see the details inside the dark dot, it is too far away, but the exterior setting of it in the overall scenery is absolutely magnificent.

The dot is growing larger and it appears to be coming in your direction. The growing dot starts to show the contours of a horse and later you see the contours of a rider. Even closer now, you see that it is not just any rider, it is a female rider. You see her face now clearly and you are warmed by her friendly smile.

My apologies for cutting the story short right here and to return to ® and the Great Scaling Pattern. Even in this simple example, there is an incredible amount of stuff going on with ® in the Great Scaling Pattern, as the diagram on the next page illustrates.

Starting at the top of the diagram, we have three snapshots of the Great Scaling Pattern. These are merely symbolic representations, because in reality the density would be infinitely higher. Starting at the top right, this is your initial focus on the dark dot (node) in the distant cloud of dust. Then by zooming in on that node, we discover that it is not a node at all, it is made of a pattern. This is represented in the diagram as a move towards the left. Within this pattern, we discover other nodes, which upon closer examination contain other patterns. This is represented by further moves towards the left.



*As cohabitants of the Great Scaling Pattern, we move with our focus from pattern to pattern within it. We discover a node, with its multi-dimensional identity and then discover a new pattern within it. This again, contains new nodes, with new multi-dimensional identities. Consequently, what we detect with our focus are patterns emerging from each other: each as a center of multi-dimensional identity.*

The diagram illustrates also that dots or points in space are merely illusions, because they contain actual patterns within them. This is an endless process, where we discover patterns emerging from each other. Where every new focus is a new center of multi-dimensional identity in our perception.

The story underpinning this graphic is an illustration set in three dimensional space. However, the actual concept behind it transcends all our physical and non-physical experiences. Thus, the old adage that there

is a problem inside every solution and a solution inside every problem (because these are patterns too) is quite applicable.

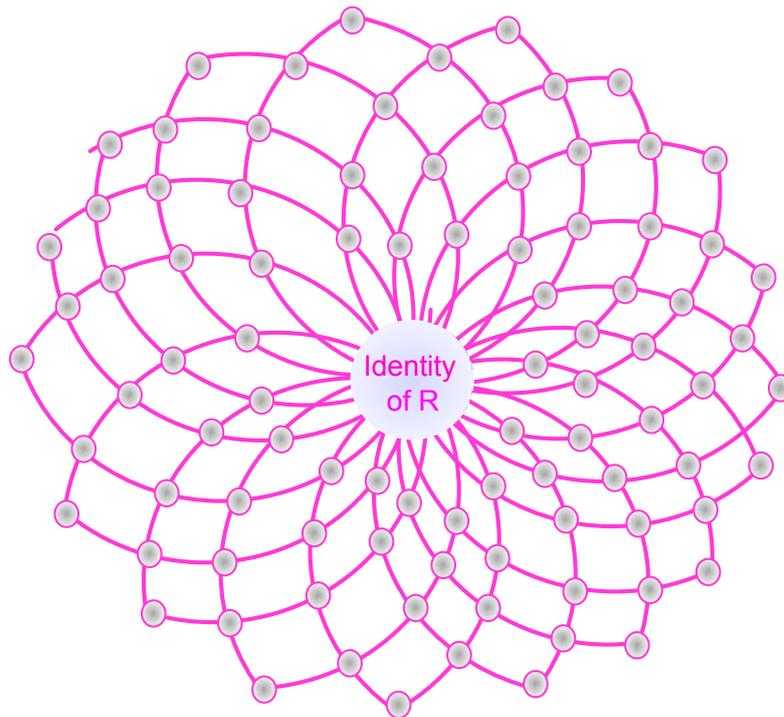
Of course, we can also zoom out, moving towards the right in the Great Scaling Pattern and discover the wider contexts of our immediate focus. By zooming out, we see the multi-dimensional aspects of the initial point of focus and the wider circles, loops, that make up these aspects.

However, while going through this motion it is apparent that these larger circles are not so easy to recognize, as in real life. They are emphasized in the next diagram, in order to bring out the functional aspects and the wider circles surrounding a node ®. Readers, familiar with the cultures from North American Indian tribes might be surprised by the remarkable similarity between this diagram and the dream catcher, a pattern favored to catch and hold your pleasant dreams. Which is also referred to as the web of life.

Coincidence?

Probably not.

This pattern is also present in Buddhist symbols, such as the Lotus flower. In a broader sense, these aspects can be found at the origin of many different interpretations of deities, such as those revered in Hinduism, religions, philosophies and views on nature.



*By zooming out from  $\textcircled{R}$ , we discover the wider circles. These circles contain many loops within them of many different sizes. They create functionality and serve as functional **aspects** in the multi-dimensional identity of  $\textcircled{R}$ .*

We can also find practical examples of these patterns in every day life. Again, it is a question of looking at things from a slightly different perspective than the one we are accustomed to.

An airport for instance: by taking some distance from the immediate physical image of an airport, we can discover the multi-dimensional identity. It includes the economic aspects of the region, the political aspects, environmental aspects, security aspects. All of these aspects, just to name a few, are interwoven with the fabric of society and each contains many looping patterns of different sizes and durations. All contribute to the multi-dimensional identity of the airport.

If this occurs to you as something natural and obvious, this is even better, because we arrived at it from the Great Scaling Pattern, high Creative-R and  $\textcircled{R}$ . Hence, we made full circle and discovered that  $\textcircled{R}$  can be found everywhere, it is just a matter of looking at situations from a slightly different perspective.

While the above example looks easy, there is nevertheless a revolution of thought hiding in this innocent looking diagram. As is apparent from the next illustration:

Imagine you are watching a bird (the type with wings). Why is the bird a bird? Obviously, the bird is now at the center of our attention and it is manifested to us through its multi-dimensional identity, with some aspects contributing to this identity by giving it birdlike features.

We can identify quite quickly some ways in which these birdlike features are transmitted from generation to generation, such as the genes, DNA, and so on. However these ways are all physical. Yet, the Great Scaling Pattern is transcendental and so are the aspects that make up the identity of this bird.

Consequently, we need to be on the alert, since our results are suggesting that the pure physical focus on these things is creating narrow vision in a reality that offers more than meets the eye.

One of the fascinating examples is the notion of group learning. Researchers in biology come across situations where certain species, such as birds, rats or monkeys are demonstrating the remarkable capacity to learn from each other while being great distances apart. It is as if a pool of experience builds up from which other 'group' members can draw. Similar phenomena are observed at the level of cells and even in the formation of crystals. From my own long experience in the field of training I could add similar examples.

To my knowledge, none of it is conclusive because it is often obscured by many other factors. Yet, there is now a new framework, which suggests in essence to go and look for it, because it should be there.

Indeed it is a direct outcome of ® in the Great Scaling Pattern, leading to "identity at large" (or simply identity) at this new level of focus.

## **Patterns of wholeness**

One of the most baffling outcomes from the transformation of virtual magic, is the fact that every ® in the universe is directly interacting with every other ®.

Understandably, there is an inclination to reject this idea as being too fantastic. Yet, it is a direct outcome from the high Creative-R found in the universe which in turn leads to this transformation and the multi-dimensional identity of ®. Indeed, the model is straightforward and not so easy to destroy since it is based on observations we can all repeat and duplicate.

Next, we could try to buffer the impact by making a different interpretation of the word 'direct'. For example, when we look up in the sky

and watch a distant star. Is the star's image resulting from the light shining in our eyes a direct or an indirect interaction? Again, the model is very rigorous and makes a clear distinction between the two: the light shining in our eyes is the result of a long chain of interactions resulting from the light waves, therefore it is indirect. Yet, the model says, there are also direct interactions.

We have a simple model, easy to duplicate and difficult to demolish, suggesting a level of interconnectedness beyond imagination and seemingly beyond the levels we observe in our normal waking state of awareness.

As a brief reminder, we reached identical conclusions already when we looked at the notion of time.

Both results are telling us that we are somehow involved in the filtering and sampling business, from a level of interconnectedness that is far greater than what we can normally handle when we are awake.

In order to understand what is beyond these filters, we should be tuning-in to experiences other than the normal state of awareness. This experience of the super interconnectedness, the patterns of undivided wholeness, is an experience of the inner world and difficult to share with others.

Yet, the potential is within each one of us and we can access these deeper levels of awareness when we are relaxed and the mind is quiet. The effect can be illustrated with this metaphor of an iceberg:

The part above the water is our normal waking state awareness. From that vantage point we do not see the larger part that is actually under water (our subconscious) because our thoughts are active. It is only when the water surface is very quiet (our thoughts) that we can look through the surface and recognize this bigger part of ourselves.

This important insight is embedded in many meditation techniques, sometimes explicit and sometimes in disguise. Therefore, meditation is one way to discover glimpses of the undivided wholeness present beyond the filters of our waking-state awareness.

However, meditation takes practice, it takes time and not everyone is interested in it.

Is there some other way?

Yes there is.

Bookstores and libraries are well stocked with examples to draw from, however they might not necessarily meet your level of expected credibility on the subject.

Therefore, my choice from this vast field of available literature are the studies of near death experiences. The interpretation of these experiences, referred to as NDE's in the literature, have received a great deal of research interest in the West during the last couple of decades. Although reports of NDE's have existed throughout the ages in many parts of the world, their significance has increased with the introduction of modern medical re-animation techniques. As a result, there is a large volume of western contemporary literature readily available.

However, it is not just the volume, because many researchers and authors in this field have taken a careful, responsible approach in their reporting and analysis. Therefore, we can benefit from the volume and the quality when probing for the principle question: what is the bottom line?

One researcher, David Lorimer, did precisely that and studied the philosophical implications of this entire field of literature, which makes for fascinating reading<sup>13</sup>. The bottom line and principle recurring theme of all these NDE's is this:

*The Near Death Experience is synonymous with experiencing the super interconnectedness, the **undivided wholeness** of the universe.*

I can underline that with my own near death experience. Sparring you the details, the actual bottom line of it, while in a deep coma many years ago, was this:

*The experience was very vivid yet I could not explain it. I was watching my own actions as an observer and participator at the same time. I was participating in a replay of past events, where all my thoughts of that moment were present in great detail. Yet, my personal emotions from the moment were completely in the background. On the contrary, the emotional impact of my actions on others was very vivid and real. **I was experiencing the full spectrum of their emotions, as if I were them.***

NDE experiences are relatively common; some estimates are quoting one person in every ten. Yet most NDE'ers are reluctant to share their experience out of fear to be misunderstood or ridiculed. On a global scale this experience is indeed massive, yet we appear to give more credit to the

existence of distant black holes. Black holes are of course less threatening because they are explained in pure physical terms.

How much more is there to gain if we can approach NDE stories in the same non-threatening way with the new insights just gained about the true character of our universe:

***A universe of transcendental undivided wholeness.***

End of chapter 8

## **Chapter 9**

### **Quiet miracles of the mind**

- ★ **The ultimate force**
- ★ **Birth of consciousness**
- ★ **Ego-consciousness**
- ★ **The subconscious of mind and body**
- ★ **Full circle**

*Life is what your thoughts make it.*

*Marcus Aurelius.*

## **The ultimate force**

There is an incredible consistency emerging from these last chapters regarding the origin of our physical experiences. Not just once, but four times, from four different directions! Indeed, at the origin of our entire physical experience and the universe is the notion of

### ***consciousness.***

Maybe you did not keep track of it so precisely. Therefore, here is a brief review:

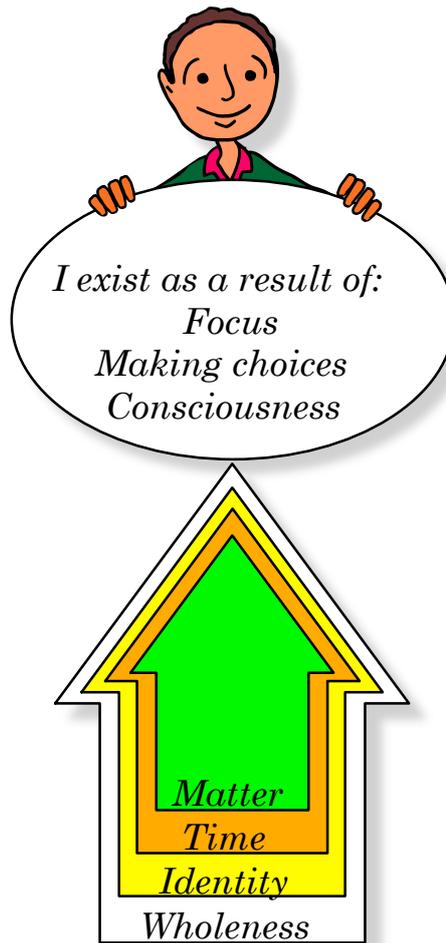
From scientists in particle physics we know that the creation of matter is dependent on the presence of an observer (making choices either consciously or unconsciously). In other words, it requires creatures like ourselves and the presence of our focus in order to make patterns of inter-space turn into matter. The scientific terminology for it is the collapse of the wave function.

Then we discovered that our notion of time is somehow a result of choosing (either consciously or unconsciously) from an incredible density of patterns, because time comes in little chunks.

Next we discovered how a high Creative-R in the universe leads to multi-dimensional identity in the Great Scaling Pattern, again depending on our focus.

Last but not least we discovered the patterns of undivided wholeness by moving from normal physical awareness to the domain of the subconscious, suggesting normal physical awareness is a result of choosing, consciously or unconsciously.

Each of these notions by themselves are a powerful independent reason for selecting consciousness as the real origin of our existence. In other words, if you knock one out with a good counter proposal then there are still three standing. This formidable line-up is summarized here in the picture:



If consciousness moves center stage as the ultimate force, how then should we think of energy?

Clearly, it is forcing a rethink of our basic ideas on energy, which turns out to be a good thing. The outcome is a **new** concept that resolves long-standing limitations from the traditional concept of energy, while still embracing it. This new emerging concept is broader and more harmonious, without destroying the practical benefits of the current way of treating energy. Nevertheless, it is likely to rock the boat in some places.

Curious by now? Let us go through the steps:

In earlier discussions we defined *energy* as the **potential to change something from one state to another**. This definition is OK if we think of energy as heat, calories, and so on. It will be referred to as the classical way of looking at energy, with roots actually dating back to the time of the steam engines. In the classical way, the movements of molecules are treated as being random. For instance, we look at the Brownian motion of molecules/particles as a form of energy and we treat this motion as a

collection of random events. In essence, embedded in it is the idea that there is nothing smart in this energy.

However, we can take this same definition of energy, that is the potential to change something from one state to another, and apply it with success to the new framework of the Great Scaling Pattern and consciousness.

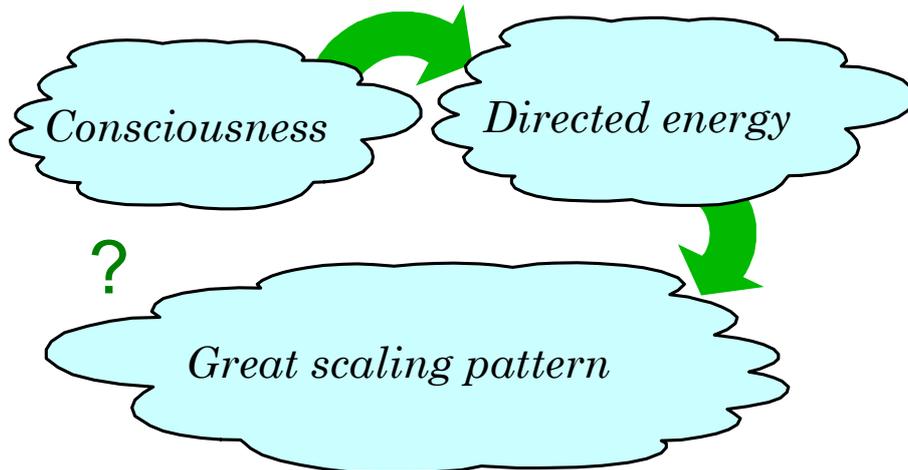
It merely requires us to view energy as an expression of organization and structure: as something that embeds organization, information or intelligence, even if we do not recognize it as such at the level of our observation.

This is highly significant because we can now break through this artificial barrier of randomness, shrouded in unneeded mystique, causing confusion about level of observation and the innate nature of whatever we are looking at. This notion is easier to follow with a specific example:

It is taken from the broad movement for quality improvement, promoted in organizations under many different labels such as Total Quality Management, Quality Improvement, Excellence in Quality, and so on. The basic idea in all these efforts is this: you look at the output of your process and you measure the variation in the critical parameters defining your product or service. When you plot these things out, there is a certain statistical distribution appearing, which is sometimes random and sometimes not. The big idea in the quality movement is to look at these distributions as information about the steps prior, hence, what are the major causes. Of course, these prior steps have their own variations, leading again to other prior steps, and so on. When tracing back to prior steps this is like tracing along interactions on the Great Scaling Pattern. Indeed, the same idea applies to energy. Thus, when we see random motion, it is because we have chosen to look at it at that level of observation.

By taking distance and observing the whole process, we can see the strong links between consciousness, energy and the Great Scaling Pattern.

This is illustrated in the diagram below.



On the left in the diagram is *consciousness*, the ultimate force leading to our *awareness*. This is manifested through the *Great Scaling Pattern*, which is forming our reality. The *Great Scaling Pattern* is **dynamic** and is formed by *energy*. Since the *Great Scaling Pattern* is made of countless loops, forming organization and structure, the energy that forms it is also organized and structured. In short, this energy is directed by consciousness. In essence, energy is not random, to the contrary,

***energy is directed by consciousness***

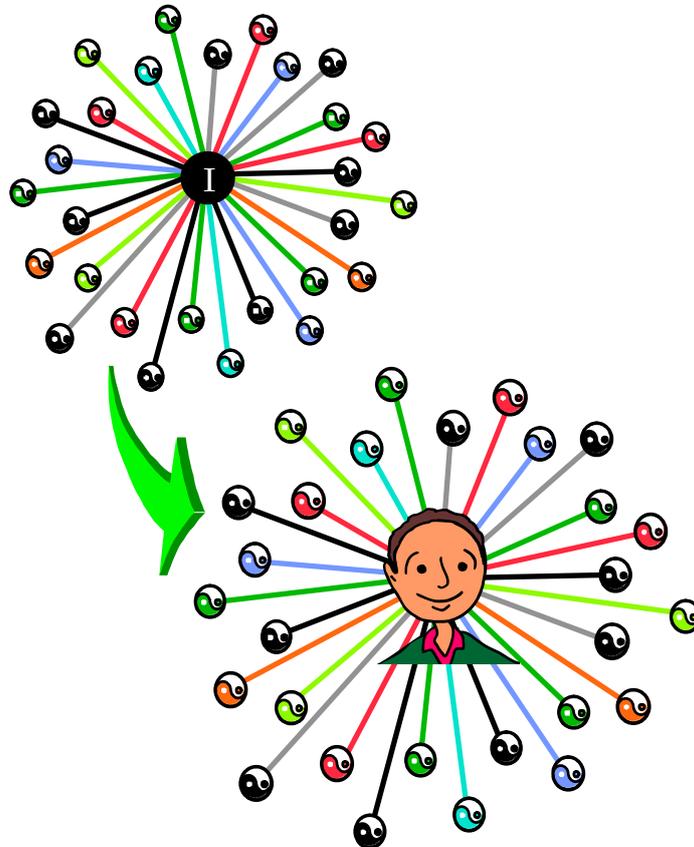
## **Birth of consciousness**

This is possibly the most delicate subject in the book: How is consciousness arising from the Great Scaling Pattern?

The question is delicate since it is not evident if we, as conscious beings, can look back from our vantage point and understand the origin of consciousness. Because, we will be looking at this question from within a system, using our consciousness in order to understand the origin of consciousness.

Yet, we might be lucky and be able to construct a logical scenario with the great new insights just gained. There is still plenty of opportunity to reject the results if they make no sense.

Undaunted by the apparent limitations, I made two copies of the picture of ® when it is at the center of countless loops, forming a multi-dimensional identity. The first copy was identical to the original image and in the second copy, I stuck my own portrait in the center of it. Then I pinned both of them on the wall in my office, hoping it would lead to some new insights. In the first image I was looking at the generic origin of identity, and in the second, I was looking at a 'finished product' from it, ... me.



I decided to let the logic simply evolve from the basic pattern on the left, knowing that there is a path full of mystery leading to the pattern on the right. In order to distinguish between the two levels, we shall refer to the generic consciousness arising from ® as simply consciousness, whereas the physical experience of consciousness at the level of our personalities will be referred to as **ego-consciousness**.

How then is consciousness arising from the generic model on the left, the multi-dimensional identity of ® ?

It is a process where several things happen at once and the diagram on the next page is important in order to understand the flow of events.

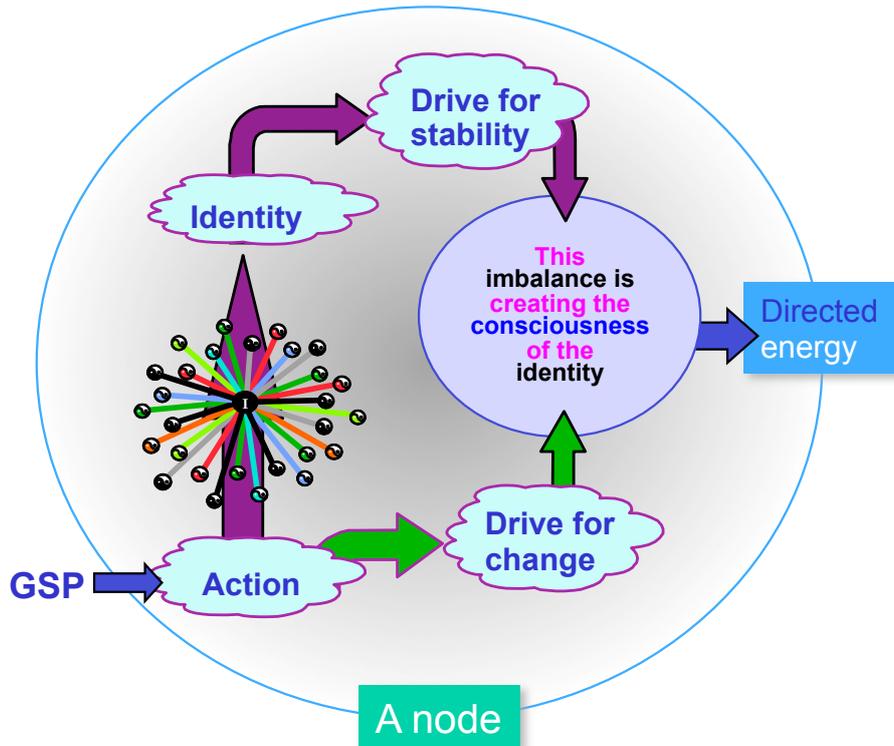
Moreover, if you imagine to be this ® in the center of these countless loops, then you can actually experience what will happen to you next.

You are now exposed to the following forces:

- As ®, you are a dynamic part of the Great Scaling Pattern and you are directly exposed to the dynamic influence of the universe, its constant motion, which is action.
- This action is really your origin because that is how your multi-dimensional identity was created. Thus, starting from action, it leads to the transformation of virtual magic which then results in your multi-dimensional identity ®.
- Since you have your identity now, you are interested to preserve it. You will seek stability and adaptation through the countless loops that make up your identity.
- But, this drive for change on one hand and this drive for stability on the other is causing an imbalance, which leads to consciousness of the identity.
- In turn, this consciousness of the identity manifests itself in the form of directed energy aimed at restoring the balance of the identity, through interaction with the Great Scaling Pattern.

The following diagram illustrates the dynamics just described in the form of a flowchart, starting with action from the Great Scaling Pattern on the left resulting in the dynamics of consciousness, leading to directed energy on the right.

Take your time to gain a good grasp of the dynamics in this diagram. It is a great instrument for a better understanding of people, society and our reality.

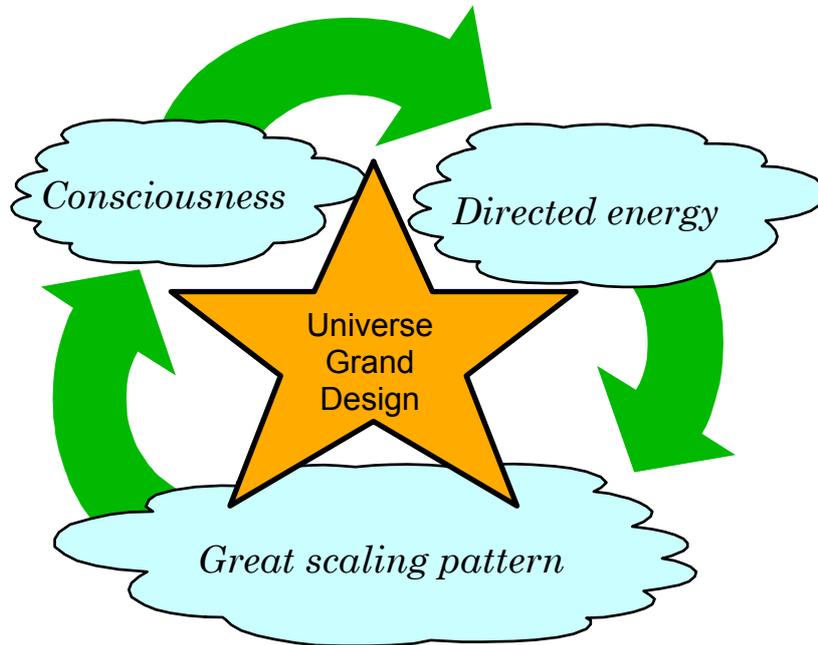


This is an incredible result and your first reaction might be similar to mine. Can **that** be the origin of consciousness?

It set me off on a wide range of searches for confirmation, but of course, most of these sources suffer from the same limitations we have. That is, they are part of the space-time dynamic order, where consciousness is looking at consciousness from within the system. Even reports from deeper levels of awareness, resulting from meditation, are then to be excluded because they are still consciousness looking at consciousness.

The first lucky break, suggesting it is indeed **that**, comes when we revisit the prior diagram of directed energy. The question mark in that diagram is now answered and we have made a full circle from consciousness to directed energy to Great Scaling Pattern to consciousness. This diagram is now redrawn on the next page, with a small modification in order to bring out its fantastic meaning. Indeed, the full circle reveals the grand design of the universe:

**Our experiences on earth do appear meaningful, since they contribute to the overall creation with new creative energies and an ever expanding consciousness. Indeed, our experience and knowledge leads to an expanding consciousness, which leads to greater directed energies, which in turn leads to expanding consciousness, and so on.**



What is very significant in this whole process is the fact that everything in this great circle, the grand design, is transcendental in nature. Therefore, consciousness is clearly transcendental and can exist in inter-space. Even stronger, consciousness can unfold faster in inter-space than within the space-time dynamic order of our physical reality.

Did we choose our physical experience on earth?

Did we choose to be actors in the theater of physical reality where we create and gain experience?

I sensed the limits of what is explainable through logic and reason. So, I decided to just enjoy the moment, to simply observe the world with this terrific new insight of consciousness, indeed, to look at consciousness in the widest possible context, at different levels of manifestation and in the different forms it might take.

This is rather overwhelming at first, because everything in our experience has multi-dimensional identity, consequently, there must be

consciousness in everything. This includes all our thoughts, our dreams, our emotions, joys, sorrows, our imaginations, our desires, physical things, the cells in our bodies, the organs in our bodies, flowers, the earth, the stars, social organizations, political movements, and so on.

These ideas take time to digest and if my personal experience is any guide, 15 years after the discovery it is still ongoing, bringing everyday new wonders about the incredible interplay around us.

For instance the idea of consciousness in nature. This is an important concept in the cultural lives of American Indians, is frequently quoted in reports from mystics, and appears as a recurring theme in certain oriental philosophies.

The notion of consciousness in a stone or rock starts to make sense, as an example of *identity* (the identity ® of the rock), leading to *consciousness of an identity* (consciousness of the rock).

On a larger scale, there is the theory of Gaia, proposed by James Lovelock<sup>14</sup>. In *The Ages of Gaia* he demonstrates that our entire earth, its rocks, oceans, atmosphere, and all living things are to be seen as part of one great organism. It is exciting to see the elegant fit of this notion of Gaia with the ideas of consciousness and identity, because the entire earth is an identity, leading to consciousness of an identity (the earth).

The dynamics of consciousness are also visible in our society under different names. For instance we call it “strategy” in organizations and it is named “politics” at the level of government.

However, explorations of these examples of consciousness are beyond the scope of this book, where we will remain focussed on exploring the origin of mind.

Therefore we will focus on the notion that every thought has identity and consequently carries consciousness. This idea is rather overwhelming and difficult to accept at first. Yet, our thoughts are an integral part of the transcendental Great Scaling Pattern and they benefit as well from the transformations that lead to their identities and consciousness. Naturally, the question comes to mind whether these thoughts should be viewed as a part of our physical experience or as a transcendental experience. We shall find out when we take a closer look at:

## **Ego-consciousness**

Ego-consciousness, introduced three pictures back, is the physical experience of consciousness at the level of our personalities. It emerges

from consciousness and can not exist by itself. Ego-consciousness is consequently an extension of consciousness. Whenever there is ego-consciousness there is consciousness at the base of it. We can be quite certain about these facts, because at the origin of our entire reality is consciousness.

For that reason, we can work our way back from the perspective of the *ego-consciousness* and reach out in the direction of consciousness. When they meet it is a most interesting event.

The first question that comes to mind is this: If I am quiet and listen to my inner psyche, my subconscious, getting in touch with my consciousness in this ocean of consciousness, how much of that consciousness is me?

The answer springs forth from our understanding of the birth of consciousness.

Since there is an *identity* behind every manifestation of consciousness, this is also true at the level of our own personality. In other words, when I am in touch with my consciousness, the *consciousness-of-the-self* deep inside me, I can be certain that there is an *identity-of-the-self* behind it from which my consciousness originates. Moreover, this type of consciousness is transcendental in nature and it can unfold faster in inter-space than in the physical domain, if it wishes to do so.

For that reason, our most intimate friend, the *identity-of-the-self*, is our individual window to the amazing world of inter-space, the world of undivided wholeness.

The answer to my original question as to how much of this consciousness is actually me, is then clearly answered: ... **all of it !**

It is the origin of my *identity* in inter-space and it is an integral part of the **me** while I experience the physical reality through my *ego-consciousness*. How much I am willing to listen to the part of me that resides in inter-space is, in principle, up to me.

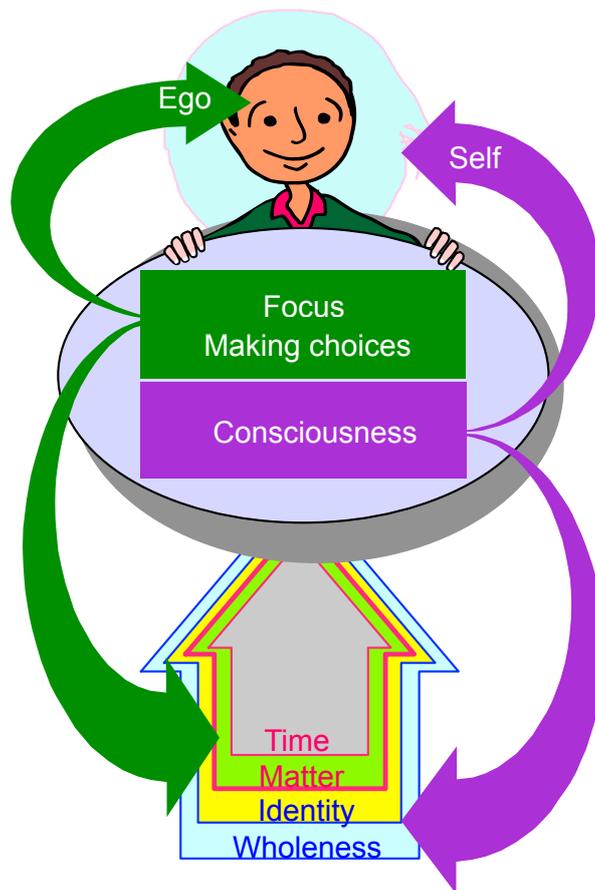
Obviously, this is an important result, not drawn from an esoteric source, but arrived at by logical reasoning and from simple observations that can be checked by everyone.

So, there is a new picture of me on the next page, representing my overall personality, showing my transcendental existence in space and inter-space.

Starting with the arrows on the right side:

They represent the *consciousness-of-the-self*, the part of me that originates from the identity-of-the-self in inter-space. This is non-physical and it is represented in the picture by a halo.

*Ego-consciousness* on the other hand is the **physical** manifestation of me, and it involves the actions of focus and making choices. The physical experience is manifest through matter and time. This ego-consciousness part of my personality is illustrated by the arrows on the left.



The big central upward arrow in the picture shows the direction of the energy flow, illustrating the origin of the *space-time dynamic order* through **energy slowing down** from inter-space. Consequently, our *ego-consciousness* results from the directed energy of our *consciousness-of-the-self*, the fountain from which our entire physical experience **originates**.

Those people among the readers who can see the energy patterns, energy centers or halos around human bodies, have at last a logical western framework where it fits. Indeed, they can be viewed as a

manifestation of the higher energy levels associated with the consciousness-of-the-self.

Esoteric literature and oriental philosophies are quite rich on the descriptions of these patterns but not always in agreement. Yet, there is a rather consistent notion through all these descriptions: they are layered patterns, forming a continuum, ranging from high energy patterns of highly fluid nature, to successive layers of lower energy which take on ever more form.

I am confident to write these lines since I can see some of them under certain conditions. Although my abilities in this area have a long way to go, they are sufficient to challenge my friends in science who rather wish to ignore them.

Scientific studies have been slow in coming, despite the fact that at least one repeatable measurement technique, developed by Dr. Valerie Hunt, has been in existence for a number of years<sup>15</sup>

These types of results were difficult to reconcile in the philosophical framework of materialism. Now however, with the LOTA framework, this should be easier.

## **The subconscious of mind and body**

*Listen to your inner voice and go your own modest but sure way. You won't be any the worse for that.*

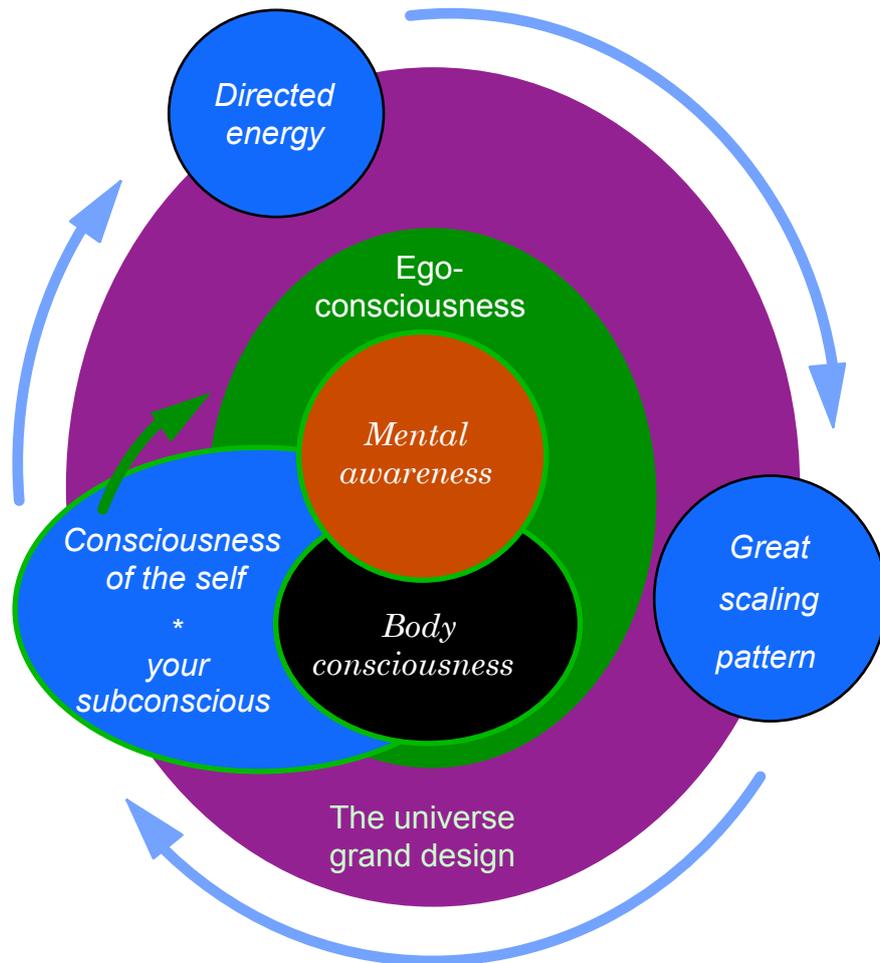
*Sibelius*

Ego-consciousness, our experience in physical reality, is an experience that has clearly a mental component and a physical component to it. The mental component is most visible during our waking hours when we are aware of what happens around us. We shall refer to it as the mental awareness part of our ego-consciousness.

In contrast, during hours of sleep, when *mental awareness* moves in the background, the aspect of *body consciousness* is more pronounced.

Things get really exciting when we treat these two aspects of our *ego-consciousness* as equal partners and link them up with their source: the *consciousness-of-the-self*. This is illustrated in the diagram on the next

page, with *mental-awareness* and *body-consciousness* each in direct communication with the *consciousness-of-the-self* in inter-space.



For operational purposes we can think of them as the big three, forming a highly interactive team: **me** that is partially manifest in physical reality (*ego-consciousness*) and another part of **me**, the *consciousness-of-the-self* in inter-space, the non-physical domain.

When I look through the lens of *mental-awareness* and think of my origin, it will appear as that part of **me** with the deep inner spaces, my *subconscious*, the origin of my personal identity. Therefore, the *consciousness-of-the-self* in inter-space is really the *subconscious* when viewed from our perspective in physical reality.

However, this subconscious part of the me, our actual origin, never sleeps. It resides in inter-space and is connected with everything through undivided wholeness. This means, we do not slide down into some lower state of consciousness when we sleep,. Instead our focus shifts to other

parts of the **me** which are more intimately connected with the domain of inter-space: the domain of *undivided wholeness*.

Moreover, there are **direct** links between the *subconscious* in inter-space and the *body-consciousness*. This is a vitally important aspect of our personality, yet it is largely ignored in our western culture, mainly because it does not fit with the current frame of thinking.

For that reason, it is useful to go a step beyond the obvious and revisit some of the research results that do **not** fit in the classical framework.

Based on the model in the previous diagram, these direct connections between our *subconscious* and *body-consciousness* would **escape** our normal mental-awareness, because they are direct. What does the research say?

The first reports of supporting evidence appeared in the early 70's and caused quite a stir. They have been followed by a steady trickle of confirmations ever since<sup>16</sup>.

There are branches in psychology which benefit from the greater 'breathing space' offered by the LOTA model, where the classical framework is too narrow for an explanation of the results. One of the obvious fields is dream research. Another example is the work of Carl Gustav Jung (1875-1961) and the neo-Jungian development of psychology, based on the concept of the *collective unconscious*. These are research fields where the results are pointing at the existence of some common pool of consciousness, similar to the concept of undivided wholeness in LOTA.

In summary, there is research evidence in the fields of psychology to support the LOTA model, in particular, when we go a step beyond the obvious.

Our arduous pursuit of logic aimed at revealing the origin of our minds can be summarized as follows:



### **Our subconscious**

- *The subconscious is the **source** of our physical experience, of **conscious mind** and **body**.*
- *We create our reality at the level of the subconscious, in inter-space, from which our physical reality emerges.*
- *The subconscious, residing in inter-space, is an integral part of the **me** and it never sleeps.*
- *The subconscious forms a part of 'the big three' of the **me** and can communicate independently with our **body**, our **conscious mind** or both.*
- *The subconscious resides in the domain of undivided wholeness, inter-space. Therefore, it is the part of us that has access to powers and potential beyond our wildest imaginations.*



## Full circle

*I kept looking for a logic that would explain life. It never occurred to me that instead love is the vital synthesis.*

*Jane Roberts, December 1981*

While I write these lines, I see the morning sun sparkling in the snow resting on the pine tree just outside my window. The snow turned the tree into a shape beyond recognition since the branches seem disconnected from the stem. In this dance between sun and snow, the snow-caps gradually melt away and the original form of the tree returns. Now, it is ever so easy to see the connections between the branches and the stem.

So it is with LOTA, because it is ever so easy to see the essence of LOTA as consciousness - the origin and presence in everything. My experience during this pursuit of logic has followed a similar course as that expressed in the lines by Jane Roberts. I became aware of the deep and profound truth behind our experience. Indeed, the age old truth that love is at the origin of **all that is**, the ultimate Source from which we originate.

This is more than a play on words, because it is deeply embedded in the unfolding nature of our universe. We have seen that our lives have meaning and that our experiences add to an ever greater richness of the total creation. Our identities choose the experience on earth, for reasons beyond our knowing. They seek expression for their fullest potential and again, we may not know what it is.

However, the nature of inter-space, with its *undivided wholeness*, would strongly suggest that these reasons are altruistic in nature. We can gain glimpses of it in meditation, through our *body consciousness*, by experiencing the oneness with the universe: an experience which is truly synonymous with the experience of universal love.

This notion of our identities seeking expression and experience in physical reality is indeed an age-old truth embedded in several eastern religious philosophies, such as the concept of karma in Hinduism. However, this would suggest a certain fatalism about our destiny.

There is an entirely different aspect coming to the forefront when we take a fresh look at the **power of our subconscious** mind in **creating change**. This is a major theme in much of the New Age and esoteric literature of the West. It is the concept of **empowerment**, the notion that our thoughts and beliefs create our reality.

## *Chapter 9 - Quiet miracles of the mind*

An understanding of the real validity of this powerful idea is now within our grasp. Truly, it is made quite simple by asking the following question:

Given the great potential of our subconscious minds, how does it make the choices among the many different realities that may exist as 'probabilities', creating the one physical reality that you know?

The answer according to esoteric sources is this:

*The true power is within you, because your subconscious mind will create **your** environment based on your **actual** thoughts and beliefs.*

We shall explore this powerful idea in the next chapter, now with the perspectives gained from LOTA.

End of chapter 9

## **Chapter 10**

### **New horizons**

- ★ **The new playing field**
- ★ **Food for thought**
- ★ **Creative achievement**
- ★ **Personal health and wellbeing**
- ★ **Education**

***A man's mind stretched by a new idea can never go back to its original dimensions.***

***Oliver Wendell Holmes***

## The new playing field

*The most rejuvenating idea of all, and the greatest step to any true illumination, is the realization that your exterior life springs from the invisible world of your reality through your conscious thoughts and beliefs, for then you realize the power of your individuality and identity. You are immediately presented with choices.*

Seth

This was quite a revolutionary thought. After the discovery of LOTA, it is no longer!

Finishing the book, I wonder how much LOTA will have affected our society ten years from now. Will our current barriers in science, psychology and medicine be broken down and replaced by the principles of LOTA? Will it be taught at high schools and universities? Will the discovery of our real origin lead to more fulfilling lives, greater prosperity and better health? Will we finally start to teach our kids how to analyze their thoughts and beliefs?

And then, I wonder, where will these changes come from, because the real essence of LOTA is *personal empowerment*. You are empowered to lead your own life, you are the artist, and you carry all this tremendous potential within you.

Clearly then, change will come about when enough people discover these tremendous potentials within themselves and find successful ways to turn them into constructive results.

How little we know as to what extent our lives are governed by karma, or hereditary factors, or our own beliefs. Nevertheless, this new understanding of our origin is bound to trigger heightened interest in the influence of our own thoughts and beliefs on the quality of our life. If we push the LOTA envelope to the extreme, we could reason that:

*Our habitual thinking patterns and beliefs create our experiences. Therefore, by changing our thinking patterns and beliefs, we can change our experiences.*

This is also a recurring message in much of the New Age literature.

However, we are not well prepared for these new opportunities since most of our formal basic education systems are strongly oriented towards the external world. As a consequence, we learn very little about the workings of our minds and the workings of our subconscious. Even basic practices such as analyzing your thoughts, feelings and beliefs are quite difficult unless you had some special training in it.

Therefore, I leave you with a few trigger points for new horizons of explorations. There are no gurus involved; it empowers **you**. They are low cost and low risk. Maybe there is something in it for you.

## **Food for thought**

During the development of LOTA, I purposely stayed away from references to channelled teachings, because I wanted LOTA to stand on its own foundation of logical reasoning. At this stage it is different, because we do have the logical framework, and the door can be opened to new ideas that have come to us in strange ways.

Certainly, one of the most influential sources of modern philosophical inspiration is the Sethian philosophy. It has influenced a generation of modern writers who have translated New Age philosophical ideas into practical ideas for better living, but is not as frequently quoted as merited. The reason is immediately obvious when we look at the source of these teachings, namely a non-physical personality, in inter-space. There is a potential problem of credibility for the writer after all his/her good efforts to translate things into practical everyday terms. How do you explain the existence of a non-physical personality in a rational way within the context of our traditional scientific framework of thinking? Now it is different, because, within the framework of LOTA, it is possible.

Seth, who describes himself as a non-physical personality, has channelled his views on reality during more than ten years, through medium and author Jane Roberts, mostly in scheduled class sessions, starting in 1972. The Sethian philosophy covers approximately 6000 pages, published through books by Jane Roberts and husband Robert Butts<sup>17</sup>.

The Sethian philosophy is remarkably consistent with the LOTA philosophy and it supports LOTA in two ways: namely, the predicted existence of non-physical intelligence in inter-space, and the consistency of the philosophical principles.

These 6000 pages are an extremely rich resource of creative ideas for new scientific explorations, personal development and psychology, yet are often mind boggling. With LOTA as a basic framework of understanding, they can serve as a new platform of innovation in directions that seemed previously beyond the boundaries of scientific endeavor, such as the tremendous potential of dream therapy for curing illness and diminishing violence.

The full scale explorations of these potentials were obstructed previously by the limiting framework of classical scientific reasoning. Again, with the new framework of LOTA, these limitations do no longer exist.

Therefore, I will quote a couple of excerpts from this vast resource in order to give you a taste for it, and it will serve double duty as an introduction to the next section.

If you are looking for creative new ideas for exploration, I can highly recommend it as a source for inspiration.

Now, sit back and relax.

Simply enjoy the quotations.

Quotations from Seth:

- ✓ *The subconscious accepts those orders given to it by the conscious mind. In each person's experience, there are areas with which he or she is pleased. When you find yourself dissatisfied, however, question the orders you are giving in that particular area of experience. The results do not seem, now, to follow your conscious desires. But you will find that they **do** follow your conscious **beliefs**, which may be quite different.*
- ✓ *Beliefs are thoughts reinforced by imagination and emotion concerning the nature of your reality.*
- ✓ *When you feel the rise of unpleasant emotions, take a moment and try to identify their source. The answers are far more available than you may have previously believed. Accept such feelings as your own in the moment. Do not shove them*

*underneath, ignore them or try to substitute what you think of as good thoughts. First be aware of the reality of your feelings. As you become more aware of your beliefs over a period of time, you will see how they bring forth certain feelings automatically. A man who is sure of himself is not angry at every slight done him, nor does he carry grudges. A man who fears his own worth, however, is furious under such conditions. The free flow of your emotions will always lead them back to your conscious beliefs if you do not impede them.*

- ✓ *Do not give any more conscious consideration to events that you do not want to happen. Any such concentration, to whatever degree, ties you in with those probabilities, so concentrate upon what you want, and as far as public events are concerned, take it for granted that sometimes even men are wiser than they know.*
- ✓ *Your consciousness attracts consciousness that is already connected with the material.*

End of Seth quotations.

## **Creative achievement**

My biggest treasure is to know of the **origin** of my mind. That is, knowing that a part of the 'me' resides in the domain of *undivided wholeness*, where all existing knowledge is available to me, if I know how.

Realizing that my *physical awareness* is merely the tip of an iceberg supported by vast resources which are also a part of me, has a profound positive influence on the way I think and react. It has led to the creation of this book and the discovery of the LOTA theory.

Once we understand the real origin of our minds, we become aware of the fantastic creative powers that are latent in us, and half the job is already done to unleash them.

The next two pages cover some of my own techniques. Maybe they trigger some ideas:

LOTA makes you aware that your perception of reality is through your own created 'filters', resulting from your focus, your thoughts and beliefs. By opening up these 'filters', letting the sun shine in from

the domain of *undivided wholeness, inter-space*, you can improve your awareness of the many valuable ideas which are constantly coming your way. This has a spiraling effect, and the more you do it, the better it gets.

The first step, after knowing the LOTA concepts, is to open up these 'filters'. There are two useful techniques which I use in combination:

The first is the regular practice of positive 'affirmations'. Some of my favorites are hanging in my office and I look at them regularly, they make me feel good. Affirmations help you to focus on your accomplishments and successes, even if you think they are minor. This is important because we shape our own future reality from our thoughts and feelings in the present.

The second useful technique for opening up the 'filters', is to pay attention to your thoughts and emotions, which in turn will lead you to your beliefs. The ideas outlined by Seth in the previous section are very helpful for that. If you find your beliefs to be limiting in certain areas that are important to you, go inside them by asking the questions 'why' a number of times in succession, till you are at the bottom of it. Remember, our beliefs are patterns too and by asking 'why,' you enter patterns within patterns.

The mere realization of where beliefs have been limiting is typically sufficient to release them.

In parallel with these two basic techniques, there are some others that I have found useful:

- ✓ *Start with small actions. Remember from LOTA: 'Actions return a thousand times'. Take this literally and you will be amazed by its effect.*
- ✓ *Daydream about your objectives. This is how you tap into your inner creative potential, which is closely linked to the domain of undivided wholeness.*
- ✓ *Rejoice in your progress and give it energy. That is how you plant feelings and thoughts of accomplishment in the **present**. Remember, we shape our own future reality from our thoughts and feelings in the present. Indeed, feelings of success breed success!*
- ✓ *Do **not** concentrate on the gap between where you are and where you want to be, because that would give identity and energy to*

*the gap. A useful technique for avoiding the 'gap trap' is to work on several projects in parallel.*

*✓ Be confident that you will attract the information you need for your progress, which might come to you in many different ways, books, articles, people, events, thoughts, and so on. Your consciousness **will** attract consciousness that is already connected with the material on which you work and your confidence in this statement will grow with experience.*

## **Personal health and wellbeing**

Two valuable techniques have come our way from the Orient which are still shrouded in mystic or miscomprehension. We will put them here in a practical pragmatic context with the new insights gained from LOTA.

For instance people take Yoga classes for years but never reach the ultimate goal, namely to steer the subtle energy currents present in our bodies. These currents are known under many different names and we will use here the name best known from Chinese medicine, namely 'Chi'.

With the knowledge that your physical reality stems from inter-space, we can gain leverage from Chi in terms of illness prevention.

For instance the meridian system, which is linked with the acupuncture points and chakras, carries information about a possible pending outbreak of a physical illness. Indeed, prior to a physical outbreak. The energy which flows through this system is Chi and we can learn to stimulate and steer this Chi, thereby building resistance and improving our health.

Over time we can also learn to apply these methods for self healing.

In my experience, every young adult can learn to steer Chi, independent of race or cultural background. It becomes a lifelong companion and the older we get the better we become in steering these currents.

As a starter, a Yoga class could be a good thing in order to develop sensitivity for these currents, which are most easily sensed in a state of relaxation. For the untrained they will be sensed as random movements.

The next stage is to learn to steer them through the main circuits in your body. In the TAO the principle circuit is called Microcosmic Orbit. I just made a quick check on the internet in order to see if a Google search will put my readers on the right track and I realized that it brings up a lot of

hogwash, in particular since it has nothing to do with 'meditation', which is our next subject in this section. If you search for Microcosmic Orbit by Mantak Chia then you will get to a pragmatic and practical information source on learning to steer Chi.

With the knowledge that our physical reality stems from inter-space and that part of our personality resides there we gain another important leverage, namely an effective way to practice 'meditation'. Whereas the benefits of meditation are widely advertised, the actual techniques are often shrouded in mystique, in particular since there was no rational framework to explain why and how it works.

The essence of meditation is quite simple and that is to:

### **Stop your thoughts.**

When you stop your thoughts you open the path from your *mental awareness* to your *subconscious* (your *consciousness-of-the-self*) in inter-space. When you manage for 20 seconds to stop your thoughts and you get a nice warm feeling around your heart, you have made the connection and you are now in contact with your deeper self in the domain of *undivided wholeness*. That's all it takes. Do this a number of times a day and your life will change for the better, because your *consciousness-of-the-self* is your best friend.

The various techniques to stop your thoughts go beyond the scope of this book and you will find plenty of it on the internet. Important is to know what to look for: There is no need for mystique and if you see terms like 'reflection', then forget it. The key is to learn to **stop your thoughts** and through it tap into the domain of infinite intelligence.

## **Education**

Sooner or later we are confronted as educators with underlying questions that divide rather than unite, such as:

Nature of the universe?  
Nature of evolution?  
Origin of our species?  
Origin of our minds?  
Who are we?  
Who or what is our inner self?  
What is our real source of creativity?  
Is there a deeper meaning to life?  
What is our sense of purpose?

The LOTA philosophy of science provides a new unifying framework for educators through which they can help our children and young adults to discover their full inner potential.

Indeed, if we could teach our children the methods to unleash the powers from within, we would see less violence, less dependency on drugs and alcohol, greater motivation, more confidence, better scholastic results and better health.

These benefits are all within our grasp if we “take the road less traveled” in the current dilemma illustrated by the knee-jerk reaction of the Council of Europe on the issue of ‘Darwin versus religion’, and embrace ‘the third way’ as explained in my response to the Council of Europe, printed here in its full length:

**Subject:** Council of Europe report on The Dangers of Creationism in Education, doc 11297, 8 June 2007

[www.universe-grand-design.info/pacereport/index.html](http://www.universe-grand-design.info/pacereport/index.html)

Response transmitted on 29 June 2007 to Mr Guy Lengagne, spokesperson for the Council of Europe education task force.

Dear Mr. Lengagne,

While the motives behind the above report are noble, the tone and direction spell disaster for generations of students in Europe, and those responsible for implementation. My brief communication here outlines the growing dilemma we will face in education, and suggests a modified scenario that could bring brighter prospects for our youngsters.

### **The growing dilemma**

Surprisingly absent in your 15 page report is the notion of 'self-organizing systems', the mathematical foundation for much of what we can observe around us, including the dynamics behind classical theories of evolution. Given then that classical theories of evolution are so much easier to defend with the aid of such a mathematical foundation, why was it omitted? Possibly: Because self-organizing system theories predict an additional dimension to the classical theories of evolution, a dimension of higher energy (spiritual connection?).

Hence, interpretations of evolutionary principles on pure materialistic criteria are heading for a growing dilemma. Yet understandably, the scientific communities involved will wish to maintain their scientific independence unobstructed by religious dogma. The result is 'science by policy', which is no longer in the spirit of open enquiry and leads to 'mental amputation' of the student's full potentials.

### **Moving now from theory to facts:**

How many people can sense their souls?

After a brief introduction to a diverse audience of young adults, 50 to 80 percent of the audience can sense their souls. Are we denying these people the legitimacy of their own feelings? Moreover, these aspects should be encouraged because the soul is an important pathway to a person's full creative potential. Are we denying these people the opportunity for the development of their full creative potential because of a 'science by policy'?

There are thousands of excellent scientists around the world who have learned to tap into these potentials and are now in one of your boxes as 'undesirable aliens', as if the enemy is on the outside.

### **Recommended changes to curriculum**

1. The polarization between religion and evolution can be diminished if we add a third 'pole' to the curriculum. This pole would provide an extended offering of courses on Emotional Intelligence. With the third 'pole' in place, questions about the soul can be raised in the context of Emotional Intelligence, thus allowing students to explore their own feelings, away from religious dogma and the rigors of science.

2. The treatment of evolution should be taught in the context of self-organizing systems principles, thereby gaining broader acceptance because these principles can be observed in every day life.

3. Students should be taught simple meditation techniques, again in the context of Emotional Intelligence. Disconnected from religion and mystique, they can be taught the benefits from learning to 'stop their thoughts'. The benefits for students and society are immense: greater self-reliance, reduced drug consumption, greater creativity etc.

With my thanks for your consideration,

yours sincerely,

Cornel Slenters

Engineer, author, educator, management coach, philosopher and concerned grandfather.

Switzerland, February 2011

*Dear reader,*

*Thank you for traveling with me on this journey.*

*May the discovery of your real origin bring constant joy to you.*

*With love from your author,*

*Cornel Slenters*

*End of chapter 10*

## **Backstage**

*The place for all that is useful but  
not essential for the story of LOTA*

- ★ **Meet Hi Energy**
- ★ **Big Fountain versus Big Bang**
- ★ **What about entropy?**
- ★ **LOTA mathematics**
- ★ **Glossary of special terms**
- ★ **Flowchart**
- ★ **The author and the development of LOTA**
- ★ **Book and web references**

*For the curious:*

***The method for estimating the Creative-R level in the physical universe, as referred to in chapter 8***

## **Meet Hi Energy**

Energy is the potential to change something from one state to another.

Suppose we meet up with an imaginary personality in inter-space who is at the origin of all energy. His name is "Hi Energy". Now suppose we can ask him questions about the level of Creative-R in our physical universe. How would he answer?

Lets find out:

Hi Sir, where are you from?

You can drop the formalities, you can call me Hi!

My origin is outside the time-space dynamic order. When a part of me splits off, and hits your space-time dynamic order, I prefer to come as waves of high energy - of high frequencies - because it gives me the potential for all kinds of variations.

For instance, I can split up in waves of lower frequencies, each requiring less energy. So I can split more often when I cascade down the frequency spectrum, thereby dividing my energy over more and more waves of lower frequencies.

Thank you Hi, that is very illuminating.

What do you do exactly at the interaction nodes and how do you know the laws?

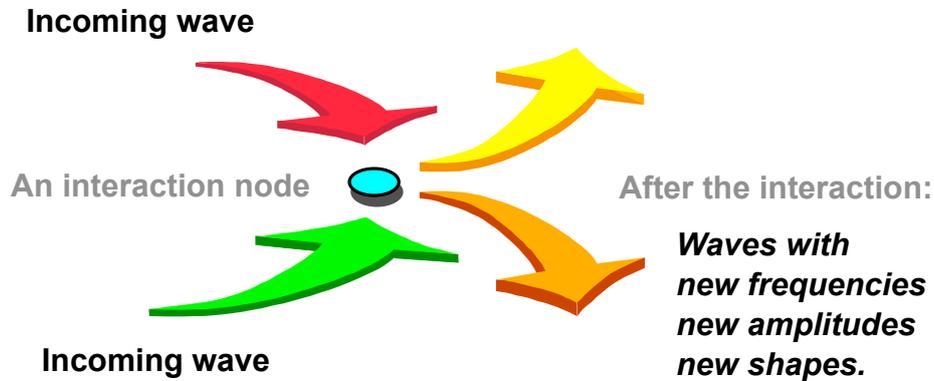
It is easy, it is in the relationship between waves. When energy has taken on the form of waves, then the waves follow certain rules based on what they are and who they meet. Hence:

*The laws governing the relationships **between** waves will determine what is happening at the interaction nodes.*

Do you want an example?

Yes.

Let us say I come in as a high pitched wave. Then I meet another part of me at an interaction node where the other part of me comes in as a low pitched wave. When we cross, we create waves of new frequencies, amplitudes and shapes. The general idea is illustrated in the picture below:



*Two waves crossing. New waves of different frequencies, amplitudes and shapes arise as a result of Creative-R.*

Thank you Hi. Can you demonstrate that the reaction levels of Creative-R in our universe are actually greater than two?

Yes, there is nothing to it! I can give you some examples. I presume you want it in a format that everybody can follow for himself.

When you look around in your world you can see three major groups of waves or forces at work:

- ✓ The **electromagnetic spectrum**, which is everything from cosmic rays down to the frequencies you find in your Hi-Fi sets and power grids.
- ✓ The **gravitational forces** like the gravitational pull of the earth on all of you, the motion of planets and so on.
- ✓ The **strong force** keeping the **nucleus of an atom** together.

We could go into more detail and talk about the 'weak force' for instance, but in the end it would not make a difference.

If I demonstrate that the reaction levels of Creative-R are much greater than two for each of these major groups will that be satisfactory?

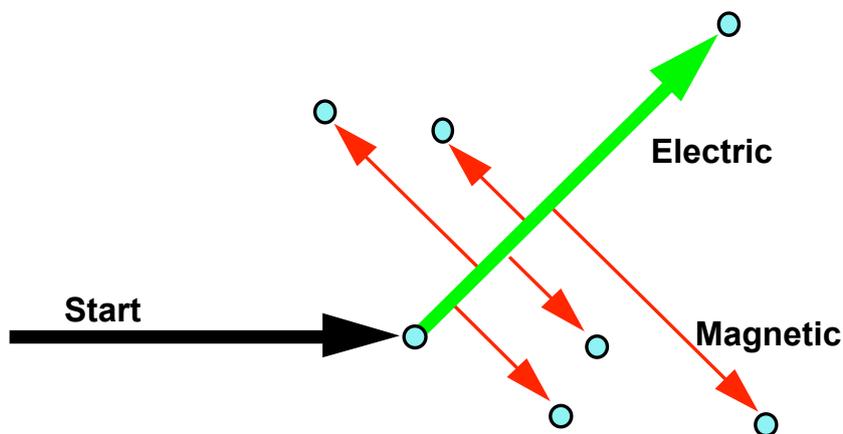
Yes.

Good, we shall start with the electromagnetic spectrum. I love this spectrum, with all its variations. For instance, I can look like an electron, become an x-ray, turn into ultra-violet, then into visible light, turning up the heat as infra red or as microwave, go around the earth as radio waves, or zip through your power grid at 50 and 60 Hertz.

While I am in this spectrum, it is easiest to think of me as an electric wave at different frequencies.

You know already that I combine and split with other parts of me at the interaction nodes, so you have a minimum reaction level of one to begin with.

Yet, as your engineers and scientists know, I carry all the time my magnetic field with me. That is what your antenna picks up in your radio or TV set and that is what you can measure when you stand below a high voltage power line. So when you think of me as an electric wave heading towards an interaction node, then I make a magnetic field that spreads out in all directions perpendicular to my electric wave. As you can see in the picture.

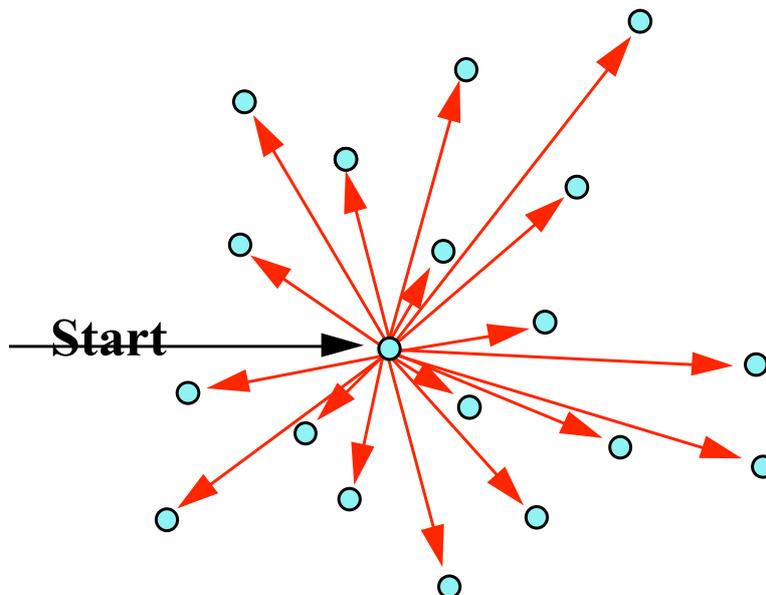


***Interactions from an electromagnetic wave create reaction levels many times greater than two.***

This means that I interact with anything that comes into my field while I am aiming at an interaction node. The result is that my reaction levels,

Creative-R, in the **electromagnetic spectrum** are many times greater than two.

Next are the **gravitational forces**. You know very little about me when I come to you as a gravitational force. While on earth, you can see that I affect everything around you. You can see my interplanetary forces at work, and you are pretty good at calculating them. However, the real nature of these forces is still a mystery to you. Actually, it does not matter in your project. The thing that is very clear about my gravitational force is that it grabs all around you. As is illustrated in this picture below:



***Interactions from gravitational force create reaction levels many times greater than two.***

When I arrive as a gravitational force at one of your interaction places, I will pull and interact with all the other interaction nodes around it. The result is that my reaction level, Creative-R, as a **gravitational force** is many times greater than two.

Next is the '**strong force**' in the nucleus of the atom. Your scientists have called it 'strong force', because inside the nucleus, things are held very tight together. They are spending large sums of money to find out what it is. They love bombarding the nucleus with all kinds of particles and they

watch the spectacular fireworks on their detectors. The reactions are very complex and the reaction level is obviously much larger than two.

There we are:

***All three major groups of waves or forces at work in the physical universe have Creative-R reaction levels that are many times greater than two.***

Thank you Hi. That is a most beneficial insight.

---

*For the curious*

## **Big Fountain versus Big Bang**

The Big Bang theory as an explanation for the origin of our universe is highly suspect, because it is using the arrow of time in order to explain the unfolding space-time dynamic order, which contains again the arrow of time. Thus, it is self referencing from the initial question till the explanation, therefore, the logical foundation is to be seriously questioned.

A more fitting explanation is the analogy of a big energy fountain. We can watch clouds in the sky expand when the rising air condenses. Nobody would venture to explain the origin of this expanding cloud as an explosion. So it is with our expanding universe, which can be explained from energy slowing down and entering the permeable boundaries from inter-space to space, causing expansion. The Big Fountain theory is consistent with the red-shift in the visual spectrum, which led to the original idea of the Big Bang. Moreover, the Big Fountain theory is consistent with both the theory of relativity and the theory of quantum mechanics, as well as with the discovery of non-locality (inter-space). Last but not least, the Big Bang theory cannot explain the origin below the first  $10^{-44}$  seconds, Planck time, where time does not exist. Whereas the Big Fountain theory can, since it is not dependent on the axis of time.

N.B. The above paragraphs are the original text from the Breakthrough print version of 1996 and are as valid today as they were then. In the meantime astrophysics has made great progress in identifying a continuous emergence of millions of 'mini bangs', countless pulsars of enormous energy and enormous energy in dark matter. While there are economic benefits in selling the public on the idea of a 'big bang', from a logical perspective the terminology is rather outdated and the term Big Fountain would be a better fit with the current developments.

---

## **What about entropy?**

### *For the curious:*

Entropy is an expression in physics for the degree of disorder existing in a closed system. Some have argued, in a philosophical sense, that the universe is a closed system and will follow the basic laws of entropy. Meaning, when things are left alone in a closed system, it will tend towards greater disorder. Thus, they argue, the universe will tend towards greater disorder.

LOTA does agree with the basic laws of entropy, but it disagrees very strongly with the philosophical interpretations of these laws when they are applied to the universe.

Here are the reasons:

The Great Scaling Pattern tells us that the universe is an open system. Therefore, the laws of entropy do not apply in a philosophical sense.

Moreover, the Great Scaling Pattern is very rich on information (the loops) and 'information' in a system is considered as negative entropy. Clearly then, this negative entropy, means a trend toward greater order, which is also the basic message of LOTA.

---

## **LOTA mathematics**

***For the curious:***

There is a new form of mathematics emerging with LOTA. The foundation of it is the Great Scaling Pattern. When it is combined with the high Creative-R, it leads to definitions for Identity, as well as for Consciousness.

Moreover, we have found the Great Scaling Pattern at the foundation of modern mathematical theories such as the Chaos Theory and the Theory of Complexity.

The Great Scaling Pattern has a rich potential as a replacement for the more traditional coordinate systems (such as the Euclidean system) in the study of complex behaviors in nature. Coordinate systems are then merely a specialized set of conditions assigned to the Great Scaling Pattern. Therefore, we can envision new computer modeling systems to emerge, which are built around the concept of the Great Scaling Pattern, as the most generalized framework from which to start investigations.

For instance, when LOTA mathematics are applied to the problem of cell specialization, the answer as to why cells start to specialize at approximately one hundred cells, may not seem such a mystery any longer.

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## **Glossary of terms**

- ✓ **Adaptive behavior** - Adaptation to new conditions as a result of feedback through looping interaction patterns.
- ✓ **Adaptive loops** - Looping interaction patterns that show an adaptive behavior, because of the type of feedback present in its loops.
- ✓ **Affirmations** - In our context, positive statements to yourself.
- ✓ **Aspects** - The functional aspects of the multi-dimensional identity of ®.
- ✓ **Auras** - The high energy patterns around living bodies. Important scientific work of the aura's influence on health has been conducted by Prof. Dr. Valerie Hunt at University of California Los Angeles, since 1970. (Also referenced in the book section)
- ✓ **Big Bang theory** - A theory to describe the origin of our physical universe.
- ✓ **Big Fountain theory** - A more complete theory than 'big bang', because it describes the evolution of our universe in physical and non-physical terms.
- ✓ **Body consciousness** - The experience of physical reality with our body.
- ✓ **Chi** - The subtle energy currents that are present in our bodies and which can be felt by most people after a brief training. They are known under many other names.
- ✓ **Chi Kung** - An ancient Chinese system of self healing based on mental steering of Chi.
- ✓ **Consciousness** - Unique awareness of every multi-dimensional identity ® in the universe as a result of dynamic behavior in the Great Scaling Pattern.

- ✓ **Consciousness of the self** - Our individual consciousness as it evolves from its identity in inter-space.
- ✓ **Creative-R** - The universal principle of propagation, in the form of new interactions that emerge when existing interactions meet.
- ✓ **Darwin (Charles)** - Originator of the Darwinian theories of evolution.
- ✓ **Directed Energy** - All energy in the universe is directed by consciousness. Therefore, the term energy should actually suffice, once this is generally understood.
- ✓ **Ego-consciousness** - That part of the me that is physically manifest and is experiencing reality.
- ✓ **Energy** - The potential to change something from one state to another.
- ✓ **Energy fields around human bodies** - see auras
- ✓ **Feedback** - In engineering design, the deliberate creation of loops in interaction patterns.
- ✓ **Great Scaling Pattern** - The evolving pattern of transcendental adaptive loops, found at the origin of all our experiences, physical and non-physical.
- ✓ **Halos** - see auras
- ✓ **Identity** - The unique multi-dimensional experience of each ® when it is connected to all other ®'s in the universe.
- ✓ **Identity at large** - A new level of identity in the Great Scaling Pattern, merely depending on our level of observation. For example, a bird has identity as a bird, but there is also identity at large for every multi-dimensional aspect of the bird, such as its birdlike features. Focus at this new 'level' of observation is then experienced as a new identity.
- ✓ **Identity-of-the-self** - The deep origin of our individual existence.

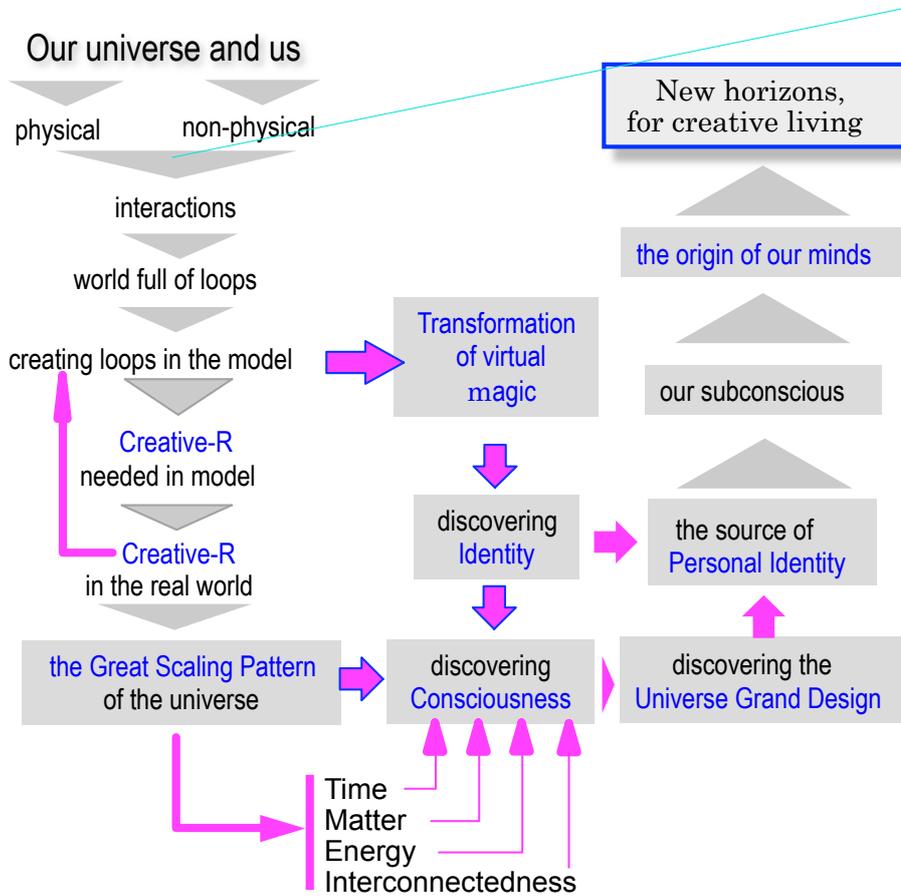
- ✓ **Inter-space** - The domain that is not subject to the space-time dynamic order. Where there are no limitations of time, space and mass. Similar to the concept of non-locality in quantum physics.
- ✓ **Interaction** - A dynamic relationship between two 'things', no matter where it started or in which direction it flows. Cause and effect discussions are of a more detailed level and do not enter into it. Interactions can be in either direction or in both directions at the same time. They can be physical or non-physical.
- ✓ **Interaction pattern** - Interactions linked into a pattern or chain, where one interaction triggers another and so on.
- ✓ **Interaction meeting place** - Where interactions meet.
- ✓ **Looping interaction patterns** - Interaction patterns where part of the interactions are looping back to other interactions in the chain.
- ✓ **Karma** - The notion in Hinduism that the soul has chosen a certain pre-destination in physical life as part of its spiritual evolution.
- ✓ **LOTA** - Logic Of The Atom or LOfical Thought about All we know, the name given to the philosophy of science described in this book.
- ✓ **Me** - The unity of the consciousness-of-the-self in inter-space and the ego-consciousness in physical reality.
- ✓ **Mental awareness** - The experience of physical reality with our mental capacities.
- ✓ **Multi-dimensional identity** - The unique multi-dimensional experience of each ® when it is connected to all other ®'s in the universe, through countless loops.
- ✓ **NDE** - Abbreviation for Near Death Experience.
- ✓ **Node** - Where interactions meet, sometimes referred to as place, region or event. At a more detailed level of observations a Node is an interaction pattern containing other nodes etc.
- ✓ **Non-physical** - Phenomena that are independent of space or time.

- ✓ **Non-physical domain** - Phenomena that are not bound by the space-time dynamic order. In principle these can co-exist with the physical domain.
- ✓ **Physical domain** - Phenomena that are bound by the space-time dynamic order.
- ✓ **Quantum physics** - The branch of physics that studies the characteristics of matter at subatomic level.
- ✓ **Reaction level** - The ratio between 'newly' created interactions and original interactions at the interaction meeting place. When two interactions meet and they create six new interactions, then the reaction level equals three or  $R=3$ .
- ✓ **®** - The meeting of interactions in a transcendental sense.
- ✓ **Space-time dynamic order** - Phenomena that are bound by the laws of space and time.
- ✓ **Subconscious** - It is the consciousness-of-the-self in inter-space, but seen from the perspective of the ego-consciousness in physical reality.
- ✓ **Theory of relativity** - A theory developed by Albert Einstein on the relationship between time, space and mass.
- ✓ **“Things”** - Any observation or experience, either physical or non-physical.
- ✓ **Transcendental** - Phenomena or principles that are valid in the physical and non-physical domains.
- ✓ **Transcendental adaptive loops** - The recognition that adaptive loops are possible in the physical as well as non-physical domains.
- ✓ **Transcendental great scaling pattern** - Denoting the transcendental nature of the Great Scaling Pattern.
- ✓ **Transcendental loop generator** - The model that demonstrates the universality of loops transcending the physical and non-physical domains.

- ✓ **Transformation of virtual magic** - The magic transformation taking place in interaction patterns when the Creative-R meets certain conditions, leading to identity.
  
  - ✓ **Undivided wholeness** - The experience of the universal interconnectedness of 'each in all' and 'all in each' at the deeper level of reality.
  
  - ✓ **Universal loops** - Looping interaction patterns in the physical as well as non-physical domains.
  
  - ✓ **Universe Grand Design** - The deep understanding of the relationships between consciousness, energy and the Great Scaling Pattern.
  
  - ✓ **Unstable loops** - Looping interaction patterns where the feedback results in unstable behavior.
-

## Flowchart

### Discovering the origins of our minds with LOTA



Your companion throughout the book.

## **The author and LOTA development**

Cornelis (Cornel) Slenters (born 1939) was raised in the Netherlands.

His formal education spans Europe and the USA, which includes an advanced engineering degree in electronics, systems & computer science from North Eastern University, Boston.

A Near Death Experience as a young adult made him acutely aware of the limitations in our western scientific framework of thinking.

Starting his career in engineering, working for Philips, IBM and Hewlett-Packard, he migrated over the years to business management and training management. In this last function he held the post of HP European Training Manager for many years with the challenge to develop the best european sales forces in the IT business.

He subsequently started his own training consultancy, Slenters Action Learning and taught a wide range of subjects related to personal development and leadership development at business schools in the Geneva region in Switzerland.

Integration of oriental philosophical ideas into a western scientific framework has been a lifelong fascination, driven by the realization that this could bring great benefits to our society.

He is an avid reader, trained in speed reading, absorbing on average the contents of 300 books per year.

A combination of factors led to the successful realization of Breakthrough. To name a few: Systems thinking, broad knowledge in the sciences and psychology, familiarity with 'complexity', time, motivation and independence from research policies since he worked as an independent researcher with no pressure for results.

Moreover he is trained in the techniques of the TAO and knows how to tap into the domain of undivided wholeness in inter-space, using some of the techniques described in chapter 10.

In preparation of the first print edition in 1996 he worked with three world class scientists, long time friends, Dr. Ueli Schibler in the field of microbiology, Dr. Albert Hofmann in the field of physics and Dr. Robert Steffen in the field of medicine. They reviewed the drafts with two principle questions as targets: Is this new? Can we break the logic?

The original print edition of Breakthrough was published in 1996 by his own publishing company, followed later by reprints. After the publication of Breakthrough he decided to concentrate on the development of applications for personal development, based on the LOTA insights. These applications were integrated in a range of courses related to personal development, from which students have benefitted till his retirement.

The LOTA philosophy of science has been standing up to the test of time since its publication in 1996 and a wider awareness of its existence could bring benefits to many.

The author decided therefore to distribute the remaining print copies to libraries and make Breakthrough available as an eBook on the internet, free of charge.

Regarding the applications mentioned earlier, he hopes to publish them on the internet, one future day and free of charge.

He lives with his family in Switzerland.

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## **Book and web references**

For further reading on LOTA and the Universe Grand Design:

[www.universe-grand-design.info](http://www.universe-grand-design.info)

[www.slenters.ch/research](http://www.slenters.ch/research)

[www.slenters.ch/lota](http://www.slenters.ch/lota)

[www.slenters.ch/challenge](http://www.slenters.ch/challenge)

[www.slenters.ch](http://www.slenters.ch)

<sup>1</sup> Website [www.universe-grand-design.info](http://www.universe-grand-design.info) carries the Council of Europe report and the response by Cornel Slenters

<sup>2</sup> - The pile of books referred to:

- ✓ The Power of Your Subconscious Mind, Joseph Murphy, Simon & Schuster, London, 1992, ISBN 0-671-69671-8.
- ✓ The Silva Mind Control Method for Business Managers, José Silva, Prentice Hall, ISBN 0-13-811000-X.
- ✓ The Nature of Personal Reality, Jane Roberts, Bantam Books, ISBN 0-553-24845-6.
- ✓ Creative Visualisation, Shakti Gawain, New World Library, ISBN 0-931432-02-2.

<sup>3</sup> - The work of Geoffrey Chew as described in Uncommon Wisdom, Fritjof Capra, Fontana, London, 1989, ISBN0-00-654341-3.

<sup>4</sup> - The Self-Organizing Universe, Erich Jantsch, Pergamon Press, 1980.

<sup>5</sup> - Chaos Making a New Science, James Gleick, Cardinal, London, 1989, ISBN 0-7474-0413-5.

<sup>6</sup> - The Emperor's New Mind, Roger Penrose, Vintage Books, London, 1990, ISBN 0-09-977170-5.

<sup>7</sup> - The Self-Aware Universe, Amit Goswami, Simon & Schuster, London, 1993, ISBN 0-671-71287.

<sup>8</sup> - The Holographic Universe, Michael Talbot, Harper Perennial, New York, 1992, ISBN 0-06-092258-3.

<sup>9</sup> - Wholeness and the Implicate Order, David Bohm, Ark, London, 1983.

<sup>10</sup> - CERN European Laboratory for Particle Physics, Geneva, Microcosm Exhibition Centre, 1995.

<sup>11</sup> - Whole in One, David Lorimer, Arkana, London, 1990, ISBN 0-14-019258-1.

<sup>12</sup> - The Tao of Physics, Fritjof Capra, Flamingo, London, 1992, ISBN 0-00-654489-4.

<sup>13</sup> - Whole in One, David Lorimer, Arkana, London, 1990, ISBN 0-14-019258-1.

<sup>14</sup> - The Ages of Gaia, James Lovelock, Oxford University Press, Oxford, 1988, ISBN 0-19-286090-9.

<sup>15</sup> - Infinite Mind, Valerie V. Hunt, Malibu Pub., Malibu CA, 1995, ISBN 0-9643988-0-X.

<sup>16</sup> - Selected authors on conscious-unconscious research, which report in the professional media on the unconscious-conscious delay and action at the unconscious level without awareness. Corteen & Wood-1972, MacKay-1973, 1982, 1987, Lee & Lisham-1974, Weiskrantz, Warrington, Sanders & Marshall-1974, Dixon-1981, Marcel-1983, Libet & Feinstein-1983, Baars-1988.

<sup>17</sup> The series of Seth books referred to: The Seth Material, Seth Speaks, The Nature of Personal Reality, Adventures in Consciousness, The nature of the Psyche, The Unknown Reality (three volumes), Dreams Evolution & Value Fulfillment (two volumes), Individual and the Nature of Mass Events. By Jane Roberts, Published by Prentice Hall and/or Bantam Books.