To my dear brother and his kind wife.

Macrostructure is another version of microstructure

and vice versa.

K.E.

Infinitylogy

Foundations of a New Discipline

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Development of Infinitylogy (CRDI)

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Foreword

This book is about infinity. It will suggest some embryonic ideas for a new interdisciplinary field of study called *Infinitylogy*. This is an attempt to marry philosophy, science and technology to turn *infinitude* into a well-known and operative actuality.

Infinitylogy refers to the systematic production of knowledge on *infinity*. By "systematic", we hint at a comprehensive set of methodologies that will harness the complex flow of *infinitude* within matter to make possible its utilization.

Up to now, we have gotten used to dissecting facts and treating only a portion, while infinitude runs everywhere inside and outside any studied occurrence. Every single thing is connected to a great number of other things, if not to everything else in the whole universe. So, the approach of *Infinitylogy* opposes the usual recommendation of the classic

scientific methodology of isolating things and focusing on singular patches only.[1]

Nevertheless, *Infinitylogy* could not and certainly would not promote this broad approach unreservedly in the treatment of reality; once it forms its general outlines, *Infinitylogy* follows some comparable directives recommended by science to discover the most subtle and infinitesimal details of matter. However, like the specific branches of science and their attitude of isolation, as soon as *Infinitylogy* dives into the deep levels of the causal chains, it follows the same attitude for the sake of effectiveness. This means that it also tries thoroughly to find the links of each tiny, insulated element with the whole structural, interrelated network that encircles it. The main methodological line of *Infinitylogy* should embrace this permanent back and

[1] In a separate text, in the set of books of *Infinitylogy* whose first volume is the current one, we will be explaining how ideas like those suggested by the Austrian philosopher of science Paul Feyerabend in his major work, *Against Method*, could be a good source from which to derive the benefits of different approaches, including "counterinductive" theories and ideas.

forth between the particular and the general, taking into account the innermost dynamism of matter.

Yet we are not there; we are even far from it. Such a methodology does not exist at the moment. We are in the Paleolithic stage of the history of *Infinitylogy* and need to be patient to reach its Contemporary age. This book is itself a good witness to this claim.

In this tome, you will find ideas and assertions on *infinity* similar to what the French Lascaux cave paintings are compared to the fine art created by Leonard Da Vinci or Eugen de Lacroix. In this book, you will find a wild bunch of raw thoughts that cannot have any higher acclaim than being precursors in this precise matter of laying down *Infinitylogy* as a new discipline.

Our goal in publishing such an imperfect manuscript was to put it in the hands of those who could be interested in this topic. The materials presented in this book could have been in better shape, but we wanted to publish them as is. The real undertaking

for elaborating such an interdisciplinary branch of knowledge will result from organized teamwork with professional standards that the author cannot assure on his own.

Since its thematic is immense, *Infinitylogy* could not articulate it except through a collective and systematized undertaking. Thus, at an individual level, what was feasible was producing more materials so that, later, some interested individuals or institutions could invest in them. This accounts for the obvious flaws of this book. The suggestive character of this latter might justify its shortcomings.

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The book introduces many ideas on *Infinity* that should be the subject of more studies, criticisms and debates. These are just primary proposals and suggestive assertions that need to be reviewed, verified and tested empirically.

The author will try to do it himself as much as possible, but other preoccupations could draw him

away from a regular, systematic and continuous effort on this subject. This is, in fact, the hazards of life and other responsibilities that persuaded him to publish this book in this shape.

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Introduction

Once human beings invented suitable telescopes, we discovered that space was bigger than what we thought before. Likewise, by building more perfect microscopes, scientists discovered that the texture of matter is composed of smaller particles than those they supposed earlier. This is a repeated trend with which the history of science is suffused.

From the above historical point, one can infer this basic idea:

The more perfect our knowledge and tools become, the more constitutive elements we discover in the macrocosms as well as in the microcosms.

So, if we assure the survival of our species, with further advancement, we would be able to discover a greater extent of these constitutive levels of material existence. It would even be possible that, at a given stage, we gain an exponential momentum in detection, sightings and discoveries.

Almost immediately, a question emerges in any enquiring mind: *If the persistence of humankind continues, is there any end to this process of discovering new macro and micro echelons in the universe?*

While it's difficult to answer this query positively beforehand, human history, in general, and the factual trend of the history of science, in particular, suggest we answer negatively to this question. No, if we keep making headway in science and technology, there would not be any limit to the levels of the structure of matter. This means that we could *infinitely* explore the macrocosms or the microcosms. The components that we will find in the larger universe or in the small-scale version would be *infinite*.

But how could we ascertain this answer? How can we gain confidence in the *endlessness* of the process of finding something bigger or smaller than what we have already supposed as being "*the biggest*" or as "*the smallest*"?

To find a relevant answer to these questions, our suggestion is to establish a specialized field of study focused on *Infinity*. A discipline that takes into consideration the features of infiniteness and its *modus operandi* inside matter. We call such a discipline *Infinitylogy*—a multidisciplinary field where philosophical theorems open the way to scientific discoveries and these latter help technology bring forth the necessary tools for more efficiency.

Infinitylogy needs to be a powerful and well-connected discipline, since it wants to drive beyond any other specific knowledge of the universe. It should embrace all the scientific acquaintances and, at the same time, it goes much farther than each of them. *Infinitylogy* presents the most challenging undertakings a new discipline has ever faced.

But how does it want to do so?

We know that the history of science is full of controversial ideas with a common fate:

- First, they were strongly rejected and considered “unfounded” until
- they could catch the attention of some curious and open-minded people,
- then, these weird ideas are fed with more comments, remarks and clarifications, and finally,
- they find a place in the long list of topics that deserve research, experiments, publications and efforts in an institutionally supported framework.
- Once this course of production is assured, these ideas are tested, trimmed, gradually formulated with clarity, and finally, accepted in the sciences’ arena as viable theories.

The suggestion that constitutes the core of *Infinitylogy* could have the same fate, but what is even more interesting is that this central idea doesn’t actually stem from *Infinitylogy* itself, but from a philosophical theory called *Infinitism*. This theory suggests that *infinitude is not only an abstract*

characteristic of matter but also a factual occurrence that any intelligent being can explore as it pleases.

Infinitism, which is the utilitarian neighbor of *Infinitylogy,* proposes that the edifice of matter is made of *intercreating causal chains* that continue in an interminable journey, either in microcosmic echelons or at macrocosmic levels. *Infinitism* thinks that this infinitude in the arrangement of matter could be well-identified and intelligently manipulated to obtain anything we want and as much as we want. In a word, *Infinitism* suggests that *everything is infinite or is not*.

The idea is that if we master the nanotechnology of manipulating the microstructure of matter, we don't need to continue operating at a large scale of production for many elements and products. It incites us to explore and exploit the universal feature of infinitude no variant of matter can escape from to implement our desired changes. What are these changes? It's a question of directed modifications that

are founded on the objective and methodic knowledge of the infinity of the structure of matter. We can use and reuse, says *Infinitism*, the material infiniteness endlessly and advantageously.

Strange idea! Isn't it? As strange as a lot of others, like the one that once suggested, "The sun does not turn around the earth but quite the reverse". So, as *Infinitism* sees humanity, society, nature, world and universe as composed of *matter*, it proposes to change them through the utilization of the ubiquitous *infinitude* within this latter. Nevertheless, we need to know how to do it. Here enters *Infinitylogy,* a discipline that has for its task the philosophical and scientific assessment of this assumption of *Infinitism*.

The task of *Infinitylogy* is therefore difficult and complex. It cannot be limited to any exclusive fields of science, but it should employ all of them. So, the question is now to know how *Infinitylogy* should proceed. How can we show that there would be—or not—a demonstrable ongoing and real infinitude in the structure of matter? The task doubles in difficulty

because, beyond a theoretical affirmation of its presence, the *infinitude* should be revealed as usable through our operative capacity of intervention.

To do that, *Infinitylogy* will have to go through a route that contains the following steps:

1. Proving itself as a possible, relevant field of study,
2. Defining its thematic scope (as precisely as possible),
3. Establishing a theoretical framework as the foundation of its methodology,
4. Elaborating on its methodology (or methodologies) and finally,
5. Launching itself as a new discipline.

Once these five steps are completed, *Infinitylogy* would be established. The current book is just an initial small rung for the first step of the five ones above.

In this book, we expose the principal set of ideas, all raw, for *Infinitylogy* and its primary concepts. If

possible, other books of this kind will follow until we can entice the interest of some people or institutions to this new topic. This is a process that might one day change the destiny of our civilization.

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Chapter I:
General Principles of Infinity

The statements and assertions we put forward in this chapter will need, one by one, to be tested, studied and verified. Their status here remains decidedly evocative as some fresh thoughts on *Infinity* and nothing more.

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(Please notice that because they have been formulated in different stages, there will be some replication.)

*

On matter:

- Existence includes anything made of matter.
- There could be "metamaterial"[2] beyond existence.
- ALL includes matter and [probable] "metamaterial".
- The material part of the All, the Existence, is infinite.
- Other parts of ALL, if there are any, could be infinite or not (we just don't know).

[2] By "Metamaterial", we mean anything possibly existing that doesn't have the general characteristics of matter. We should specify that in *Infinitylogy* / *Infinitism* we presuppose that everything, without any exception, is made of matter.

- Existence is knowingly made of matter.
- Matter is the endless subsequent set of components and their interactions.
- This endlessness represents *infinity*.
    - Matter is the infinite subsequent components and their interactions.
    - Matter is the infinite number of interrelated components.
- Any material finite contains infinitude.
- Any finite is structurally infinite.
- Any infinite is composed of finites.
- Existence is the interaction of infinites containing finites.
- Existence is the interaction of finites containing infinites.
- Existence is the interaction of infinities.
- *Infinity* is the endless reproduction of infinitudes in finitudes.
- Infinity is the endless reproduction of finites by infinites.

- Any finitude contains infinitude running in its structure.
- The finitude of matter is an expression of the infinitude of its structure.
- Infinitude is the endless interconnection of finitudes.
- The infinitude of any finite is the endless interconnection of its components.
- Each component is itself a finitude.
- Each finitude is infinite.
- Each component represents a finite structure.
- Each finite structure is a set of infinitely continuous substructures.
- Each component is infinite.
- Matter is the never-ending iteration of infinite interconnected finites.
- Matter is the iteration of infinite interconnected structures.
- Matter is the endless iteration of infinite interconnected components.

On the universe

- The universe is a part of existence.
- The universe is the perceptible part of existence [to humans].
- The universe is made of matter perceptible to humans.
    - Human perception is our only standard for understanding everything.
    - However, we are aware that our understanding is deficient.
    - Awareness of this deficiency makes its damage and errors manageable.
    - The awareness of humans' deficient understanding should be objectively organized.
    - *Infinitylogy* will try to objectively organize the finite knowledge human beings have of infinitude.
    - The capacity for expansion of the finite knowledge human beings have of infinity is unlimited.

On the classification of matter:

•Until now, the hierarchy of what the human mind apprehends could be classified in order as ALL, Infinity, Existence, Matter, Universe, World, Nature, Society, and Man.

- ALL is anything material and "metamaterial".[3]
- Infinity is the endlessness of what constitutes ALL (matter and, maybe, "metamaterial"[4]).
- Existence is the material part of ALL.
    - Existence is not ALL.
- Matter is made of causal chains intercreating infinitely.
- The universe is the part of existence apprehensible with human senses.
- The world is the part of the universe dealt with by humans.
- Nature is part of the world humans live in.

[3] The presence of "metamaterial" is just a subjective supposition.
[4] Here, the metamaterial or the metamatter is what is unknown for now but could be beyond or different than matter.

- Society is the human part of nature.
- Humans are a collaborating production of nature and society.
- Infinity is not a thing but an action.
- Existence, Universe, World, Nature, Society and Humans are made of matter.
- Matter is infinite but is not infinity.
- Matter is what by which everything exists.
    - Anything that is not of matter doesn't exist.
- Existence contains the infinity that is materially tangible.
- The finite means where and when the infinitudes encounter each other and make matter exist.
    - Existence is the most comprehensive concept created by humankind to apprehend matter's magnitudes.
- Existence is an invention.
- Infinity is a discovery.

On the cause of matter

- Matter is made of infinite processes.

- Any infinite process is a causal chain.
- Any causal chain is infinite.
- Infinity is not the cause of existence but its causation.
- Any causation is the result of an accumulation of alterations.
- Any alteration is produced by an accumulation of the movements of interconnected components.
- Alterations or movements occur in the infinite levels of the structure of matter.
- At each level of the structure of matter, components are infinitely interacting.
- As soon as the interactions between the components of a given stage reach a necessary or critical quantitative point (accumulation), the change or movement is produced (alteration).[5]
- A produced change or movement means that some changes or movements had already been produced at a smaller level a priori.

[5] A little farther on, we explain this process in more detail in terms of accumulation and alteration as the two main dynamic mechanisms in the structure of matter.

- Movements / changes are occurring infinitely at each level.
- No change or movement could be produced at a given level without having been prepared and made possible in its precedent levels.
- Also, when a change is produced at a given level, it means that a change or movement will necessarily be produced or happen at its posterior level [a posteriori].
- At each level, a phenomenon has a unique existential identity.
- A unique existential identity is a material signature containing the interactions of all levels at a converging point.
    - There is no absolute similarity between two phenomena in the universe.
    - Each phenomenon, beyond its similarities with other cases of its category, carries its unique existential signature.
- A causal chain is composed of infinite elements interacting as causes and effects.

- Any cause is an effect as well.
- Any effect is a cause as well.
- Any phenomenon / component is a causeffect[6].
- Cause and effect change their place in a reciprocal relationship between two phenomena in a causal relationship.
- Each cause has several effects.
- Each effect has several causes.
- Each causeffect moves in four directions:
    - To a higher [vertical] level the causeffect is a part of.
    - To a lower [vertical] level the causeffect comprises in itself.
    - Forward to the same [horizontal] level.
    - Backward to the same [horizontal] level (anterior).
- The four directions of a cause / effect's movement are interconnected and interacting.

[6] We use the neologism causeffect to express that any phenomenon is, at the same time, both cause and effect.

- Any change in each of these four directions could cause a change in some or all of them.[7]
- What we call the "structure of matter" is the constant interactions of these four moving processes among its components.
- The same goes for any component of a phenomenon: every phenomenon is a result of the constant interactions of its elements in these four directions.
- Shape and substance are the same in reality.
    - The distinction between shape and substance (recipient and content) is an invention of the human mind.

On Sets

- The Universe is the interconnectedness of sets.

[7] One of the lessons of Total Interrelatedness is to free our mind from the limiting anthropocentric measurements of the affection and influence of a movement in the universe. Once we understand the pervasive character of infinitude in everything, it's readily imaginable that the degree of mutual and reciprocal interrelations could also be infinitesimal in such a way that if we dive into a given level, we could finally find some greater degree of effective influence in the deeper microscopic echelons.

- Each set is a phenomenon composed of subsets.
- This flow of each set being composed of subsets moves infinitely in any echelon and any phenomenon.
- Any phenomenon is thus the materiality of infinitude.
- The materiality of infinitude makes it possible for any phenomenon to exist continuously.
- This materiality is the same as the process composing the structure of matter; the structure of matter is the consistent interaction of the four moving processes above.

On Universal Solidarity

- All the phenomena of the universe are interrelated.
    - The interrelation between all phenomena is called Universal Solidarity.[8]
- Universal solidarity contains all the interactions of all the phenomena in the universe.

[8] Somewhere else in this book, we also called it Total Relatedness (TR).

- Any change in a phenomenon causes a change in all phenomena.
- The interrelations of all the components of the universe are similar to those that occur in a single phenomenon.
- The sameness of the structural / interactional process, at all echelons and with all their variations, is the core of the interrelatedness of the universe called Universal Cohesion.
- Universal cohesion makes the interaction between all the universe's components possible.
- Universal Cohesion and Universal Solidarity are ordered like content and recipient.
- Universal cohesion is the internal logic of universal solidarity.
- No matter could exist without universal cohesion.[9]
- No matter could continue existing without universal solidarity.[10]

[9] Open question: Is it possible that "antimatter" or "dark matter" or "black holes" cannot connect with "matter" because of not having this universal cohesion?
[10] See note 8 above.

- Universal solidarity makes possible the existential continuation of matter and, through this, its infinitude.
- From these interconnections of all matter comes the perpetual alteration of the whole and every single component.
- Infinitude is the causeffect of universal solidarity.
- Infinity is what makes matter exist.

On the status of mind

- Mind is infinitely capable if we free it from its finitude.
- Mind is conditioned by the intellectual history of humankind.
- The conditioning of mind happens equally consciously and unconsciously.
- To understand infinitude, we need to free the conscious part of our conditioned mind, while gaining a deep comprehension of infinitude requires freeing our mind from its unconscious conditioning.

- The conditioning of the mind means assuming the habit of seeing finitude in everything.
    - This habit is historical and deeply internalized in our collective mind.
- While we are not born with this finitude-oriented perception, we are trained in it.
- Socialization and education are the main agents of educating us on the finitude of matter.
- The liberated mind accounts for understanding infinity in its immense meaning.
- This finitude-free mind is necessary to discover how infinity operates.
- Our understanding of how Infinity operates is the *sine qua non* for shaping the *Infinitylogy*.
- Infinitylogy could be useful if it's built upon an increasingly deeper and more objective knowledge of infinity.
- Infinitylogy is the unbounded methodic and objective knowledge of Infinity.
- Infinity cannot be seen /observed but is perceived.

- Infinity cannot be experimented with but is experimental.

On finitude

- Every finitude contains an infinite number of finite entities.
- Each entity is a finitude.
- To be a finitude, a thing should bring about an infinite number of other finitudes (through the domino effect).
- No finitude could be produced without producing an infinite number of other finitudes (through the domino effect).

On the mechanism of the production of infinitude

  - Any entity contains infinite components.
  - Each component contains infinite subcomponents.
  - Each sub-component contains... (it goes on interminably).
- Every entity will cause infinite other entities to exist (through the domino effect).

- Every entity is itself caused by infinite entities that are caused, themselves, by an entity.
- As it's infinite, each entity contains as many sub-entities as you can find in any other entity.
- Any intelligent being wanting to operate on the infinitude of an entity should conceive of it, objectively, as infinite.
- Any dealings with infinitude should be conducted with a finite occurrence at the infinite levels of its structure.
- From the encounter of infinitudes at each level will be born new finitudes [that contain infinitude].
- Any finitude is the result of an encounter with some infinitudes.
- Any finitude is the result of an encounter of infinitudes simultaneously creating other finitudes.
- At each level of an infinitude, its encounter with other infinitude(s) creates a new finitude(s).

- Through an encounter of two finitudes, it would be possible to create endless new finitudes.
- Each finitude creates infinitude and each infinitude brings about finitude.
- In the dialectical interaction between finitude and infinitude, matter is born in all its diversity.
- Matter is the result of the constant conversion of finitudes and infinitudes to each other.

On Accumulation and Alteration

- The structure of matter is a combination of infinite *alterations* and *accumulations*.
- The structure of matter is the infinite alteration of accumulations and the infinite accumulation of alterations.
- The structure of matter is an infinite process of accumulations of alterations and alterations of accumulations.
- Accumulation refers to the tally of alterations.
- Alteration is the passage from one set of accumulation(s) to another.

- At each level or stage of the structure of matter, an accumulation of alterations occurs.
- The accumulation of alterations and the alteration of accumulations occur simultaneously at four levels:
    - At the anterior segment of the same structural level,
    - At the posterior segment of the same structural level,
    - At a hierarchical macro-level,
    - At a hierarchical micro-level.
- At each level, Accumulation contains the alteration of the precedent accumulation and this latter contains a set of alterations; it keeps going infinitely.
- Any accumulation is a set of micro-alterations / accumulations.
- Any alteration is a set of micro-accumulations / alterations.

- Therefore, matter is the accumulation of alterations composed of sub-accumulations of alterations and so forth.
- The ongoing process of accumulation / alteration is what constitutes matter.
- The sameness and ontological interchangeability of these two (accumulation and alteration) are what form the homogeneousness of matter anywhere and in anything (Universal Cohesion).
- We find this interchangeability in the case of Einstein's relativivity equation, where *energy* is nothing but "*mass times the speed of light squared*" ($E = mc^2$).
    - In this equation, *Energy* is the alteration of accumulation while *Mass* is the accumulation of alterations.

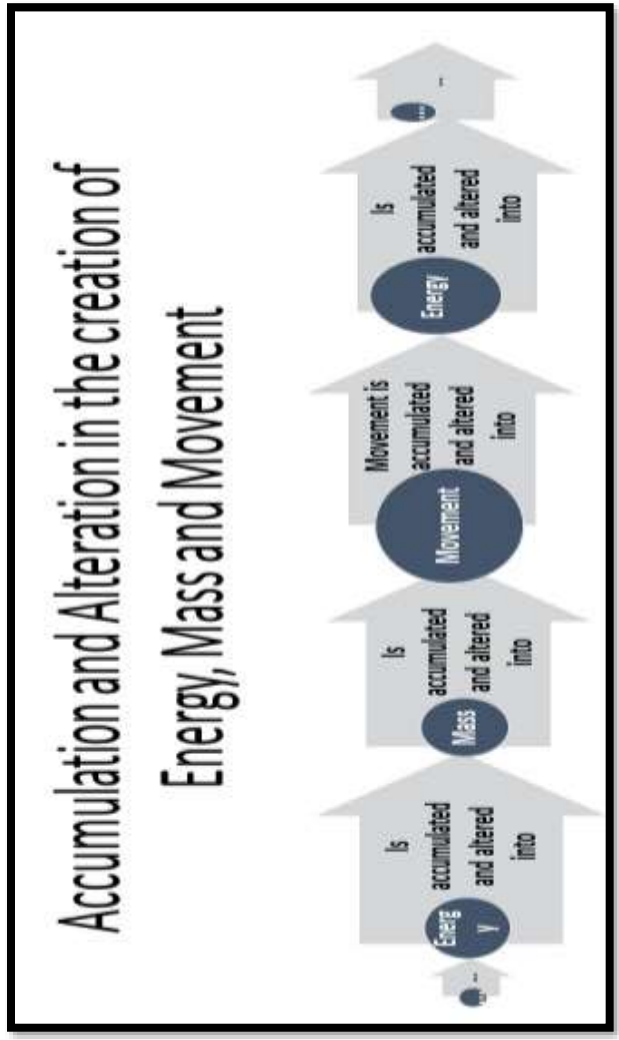
- The squared *Speed* of light is nothing here but the velocity[11] of accumulation / alteration.

- Velocity is different in accumulation and alteration.
- The variation in velocity is infinite.
- What Einstein saw as the *relativity* of space-time would be the same as the variation of velocity in different accumulation / alteration processes.
- If we break down the structure of an accumulation at each level, it could have a variable velocity.
- This means that each accumulation is itself a set of sub-accumulations/alterations with their variable velocities.
- In each accumulation, we have an infinite number of velocities.

[11] The velocity of an object is the rate of change of its position with respect to a frame of reference and is a function of time. Velocity is equivalent to a specification of an object's speed and direction of motion.

- "*Speed*" is a time-conditioned and deficient version of velocity invented by humans to reduce the complexity of a movement or process.
- What determines the variability of an accumulation is its velocity, since it provides the *magnitude* and *direction* of its contained alterations.
- Based on magnitude and direction, accumulation turns into alteration and alteration into accumulation.
- *Mass* receives *energy* and moves, the movement generates energy, then this latter shapes mass and again, mass is in movement and produces energy and so forth.
    - Mass is produced by accumulated energy,
    - Movement is generated by the alteration of [accumulated] mass,
    - Energy is produced by the alteration of accumulated movements,

- ...then the above steps are repeated as an endless process of accumulation/alteration and alteration/accumulation.



On Velocity

- In each accumulation, infinite velocities occur.
- In each velocity, infinite varieties of magnitude and direction occur.
- An alteration is, itself, the outcome of the infinite velocities of sub-accumulations / sub-alterations inside a given accumulation.
- Alteration comes from the countless variability of the magnitude(s) and direction(s) of the velocities of an accumulation.
- Accumulation comes from the countless variability of the magnitudes and directions of the velocities of alterations.
- Each alteration/accumulation has infinite velocities with countless changes in magnitude and direction.
- Each accumulation is brought about by a set of velocities of alteration(s).
- Each accumulation is the result of the infinite variability of the velocities' magnitude within an alteration.

- Each accumulation is the result of the infinite variability of velocities' direction within an alteration.
- Therefore, matter is made up of interactions between the infinite velocities of accumulations and alterations.
- Every accumulation will end up with alterations.
- Everything is an accumulation of alterations.
- Alteration is the transition of one accumulation to another.
- Every finitude is an accumulation of accumulations.
- Every finitude contains infinite accumulations.
- Velocity determines the magnitude and direction of an alteration.
- The encounters of accumulations shape finitude(s).
- The interaction of accumulations occurs through alteration.
- Alteration causes new accumulation(s).

- New accumulations encounter other accumulation(s) and shape finitudes.
- New accumulations interact with other accumulations and create alterations.
    - [New] finitudes interact with other finitudes and create alteration(s) [changes].
    - Then, the new alteration (change) causes new accumulations and
    - this process keeps going infinitely.
- While finitude is shaped at a given level, in all other levels, infinitude occurs.
- Any accumulation occurs by gaining magnitude and direction (velocity).
    - Magnitude represents the iteration of the accumulation, while direction depends on the encounter with another accumulation.
        - The two accumulations could come from
            - The same level

- The upper level
- The lower level

- From the encounter of two accumulations, a change of direction is born.
- A change in direction represents alteration.
- Any encounter of accumulations causes a change of direction at one of these levels:
  - The same level
  - The upper level
  - The lower level
- From the interaction of these encountered accumulations, there is born alteration.
- This alteration determines the potential / initial magnitude and the direction of a new accumulation.
- Once the accumulation is on its way, the variability of magnitude and direction is created progressively.

- Each accumulation contains infinite alterations.
- Each accumulation contains infinite sub-accumulations/alterations.
- Each alteration contains infinite sub-accumulations.
- Each alteration contains infinite sub-accumulations/alterations.
- Each accumulation contains infinite magnitudes and directions (velocities).
    - Alteration creates accumulation.
    - Accumulation causes alteration (through its magnitude and direction).
- Any accumulation, by its magnitude and direction, will meet another accumulation, mutually affecting the magnitude and direction of each other.
- This affection process is called alteration.

- The alteration determines the new accumulations based on their initial magnitude and direction.
- The process by which the magnitude and direction of an accumulation is affected (i.e., alteration) happens endlessly at all levels.
- Therefore, any accumulation is micro-accumulation.
- Accumulation means the interaction between components and subcomponents of the structure of matter.
    - Interaction means ongoing accumulation / alteration,
    - Component means a set of accumulation / alteration(s),
    - Structure means interaction between the sets and subsets,
    - Matter is the interactions between accumulations.

- The crucial and important point is the sameness of all the above suggested points: Accumulation, Alteration, Interaction, Component, Structure and Matter.
- Accumulation is the tally of interacting structures that brings about a change, either in magnitude or in direction (alteration).

On the Fractal

- Infinity is a fractal characteristic of matter.
- Infinity is an endless fractal process.[12]

*

Some general propositions for infinity

- Matter is endless interconnections.
- Matter is infinite.
- Infinity is endless interconnections.
- Infinity happens in matter.
- Infinity happens within matter and nowhere else.
- Nothing could be without being infinite.

[12] See the fractal representation model of Mandelbrot.

- There is materially nothing but infinity.
- *Everything is infinite or is not*.
- Existence is intertwined infinitudes.
- Existence is infinite intercreating infinitudes.
- Structure is interconnections.
- Any interconnection is made up of interrelations of substructures.
- Any structure is the infinite interconnection between its components and sub-components.
- The components of a structure constitute the causal chain.
- Any causal chain is an interconnection of components.
- Any component is the sum of causal chains.
- Matter is infinite causal chains.
- Matter is infinite interconnected causal chains.
- Matter is infinite intercreating causal chains.
- Infinity is not structure but what makes structure.
- Infinity is not matter but what makes matter.

- Infinity is not components but what makes components.
- Infinity is not existence but what makes existence.
- Existence is made up of material infinities.
- Matter is made up of infinite components and their intercreative relations.
- Components are made up of sub-components.
- Infinity is not a sub-component but what makes sub-components.
- Sub-components are made of structures.
- Infinity is not structure but what makes structure.
- Structure is made of interconnections.
- Infinity is not interconnection but what makes interconnection.
- Interconnection is the action-reaction between elements.
- Infinity is not action nor reaction but what makes action-reactions.

*

- Infinity is not a thing but what a thing is.
- Infinity cannot be reduced to any aspect of existence but existence itself.
- Infinity is the only genuine Reality. All others are its byproducts. Thereby, nothing could exist without being infinite and having infinity running in it.
- Infinity is not the cause of existence but its causation.
- Because anything is infinite, infinity is everything.[13]

Finding infinity means proving the infinite character of what we are looking at, and that's all. We don't *find* infinity; we approve of it after having determined the

[13] The data tell us that the radius of a quark is smaller than 43 billion-billionths of a centimeter (0.43×10^{-16} cm). That's **2,000** times smaller than a proton radius, which is about 60,000 times smaller than the radius of a hydrogen atom, which is about forty times smaller than the radius of a DNA double-helix, which is about a million times smaller than a grain of sand. So there. Quarks (along with electrons) remain the smallest things we know, and as far as we can tell, they could still be infinitely smaller.

infinite character of the structure of the studied phenomenon.

On the Law of Everything

The simultaneity of creating and being created is the *Law of Everything*.

- Any action of creating causes something to be created.
- Anything being created causes some other things to be created.
- There is no separation possible between these two actions: to be created and to create.
- In any entity, the infinite elements are acting / affecting / influencing each element of the entity and this element is acting / affecting / influencing the infinite other elements of the entity (through a domino chain).
- Each creation is the result of an accumulation of alteration processes within the elements of the structure that constitutes / creates the phenomenon.

- To get the desired / targeted change (status) in the structuring causal chain of an entity, we must know the scope (and the number) of the changes (accumulations / alterations) that are necessary.

While we think that a change is a transformation of quality, we should know that:

- Quality is nothing but a specific attained quantity.
- Quality is nothing but the specific attained quantity of accumulations and alterations.
- Quality simply expresses an unknown quantity.
- Quality is our fabrication to exonerate us from the calculations of quantity's complexity.

Everything is infinite or is not.

- Infinity is quantitative or is not.
- Therefore, everything is quantitative or is not.
- Everything is an infinite quantity.
- Existence is the infinitude of infinite quantities.

- Existence is the infinite quantity of infinite quantities.
- Existence is the infinity of quantities.
- Existence is infinite quantities.
- By *Infinity*, we mean infinite quantities.

*

Once again, we reiterate that the above statements are put here as suggestions and should be adequately studied, criticized and experimented with.

**

Chapter II:
Infinitude and Its Rules of Action

In this chapter, we will try to ground some basic presumptions on how *infinity* is detectable and operant within matter. The profound production of matter could not be conceived dynamically except through the detection of infinitude. Here is how.

*

Some presumptions:

The universe is the interconnectedness of sets.

A set is a gathering of Components, Interconnections and Probabilities.

Components are the subsets of a set.

Interconnection is the way the components are related in a set.

Probability is a potential interconnection between components.

A change is any new interconnection between the components of a set.

*

- The universe is the set of sets.
- Each set is itself a universe.
- Components are the sets inside a set.
- Interconnection is an actual probability.
- Probability is a potential interconnection.
- Probability is an interconnection conditioned by possible alteration.
- Probability is an interconnection conditioned by occurrence.
- Change / occurrence / alteration is a new relation between components.

Supposing that all sets (entities) in the universe are interconnected, we can call this *Universal Solidarity*.

The objective of this concept and the idea of total relatedness is inclusiveness. But we are aware that the latter is neither static nor an entity in itself. Thanks to this concept, we can avoid the omission of any level or sphere of existence, either in our minds or in the real arena of matter, from the frame of an anthropocentric epistemology.

The function of such a work is to have a progressively more comprehensive conceptual framework to apprehend our capacity for changing the world, the universe and existence. This is a demonstration of our *infinite capability*.

In this work, we introduce some conceptual and analytical tools that go beyond our perception of existence. By trespassing the conditioned limitation of our epistemological views, we can transcend our human existential level.

This book tries to establish the primary ground for this long journey of changing the known universe and conceiving new ones.

Rearrangement of Dasein[14]

- Existence is the interaction between infinitudes.
- Infinitude is presented as endless causal chains.

[14] "According to Heidegger, human being should instead be conceived as Dasein, a common German word usually translated in English as "existence" but which also literally means "being there." (source: Britannica)

- Endless causal chains are cause-effects—chains of events and things that expand without any limit.

Therefore,

- Existence is the interaction between the cause-effect chains of events and things that expand without any limit.

The absence of limit in the cause-effects chains of events and things makes them move in any direction on the vertical / horizontal or macro / micro levels.

Therefore,

- The most important element of existence is interaction.
- Existence is the infinity of interactions.

Existence

=

*Interaction of infinitudes * Infinitude of interactions*

Therefore,

- Existence is infinite interactions.
- Existence is interacting infinites.
- Existence is intercreating infinitudes.

*

- Infinity is limitless interactions.
- Interactions are infinite.
- Any interaction is infinite (in a raw reality that doesn't artificially isolate / separate interaction).
- Any interaction is part of an infinite set of interactions.
- Any interaction is a part of existence.
- Each interaction causes several interactions in several chains of events.
- The interactions caused by an interaction are infinite.

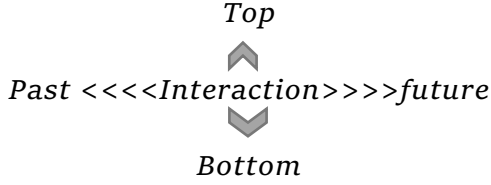
Each interaction, by the fact of engaging the infinities included in things, creates infinite chains of events (infinite intercreating interactions).

Therefore, any interaction contains infinite [sub] interactions.

Therefore, each interaction integrates and comprehends the infinity of interactions without any boundary of time or space.

Interaction simultaneously integrates past, present and future.[15]

Interaction integrates all dimensions and directions.



In each interaction (thing, entity), the infinity of interactions is actively included.

This relatedness of interactions is the ever-expanding reality of matter.

Therefore, existence is expanding infinite interactions.

[15] We repeat that time and its divisions are a purely conceptual human invention.

Existence is the expanding relatedness of infinite interactions.

We can imagine this expanding relatedness as a *Universal Solidarity*. This includes all infinite interactions, whether actual and potential.

Universal Solidarity (or Total Relatedness) includes existence in its actual and potential forms.

Universal Solidarity is the integration of existence's infinitude in anything that could / would / will be.

Universal Solidarity (*Total Relatedness*) is the integration of the infinite universes that could / would / will be interacting infinitely with each other.

Total Relatedness = TR: The most general idea

Existence = E: Infinite interactions

Infinity = I: Endless [expanding] intercreating causal chains

Interaction = IN: Cause-effect chains of events (acting causal chains).

$$TR = Existence = Infinity = Interactions$$

Every interaction represents a part of infinity.

Every infinitude is a part of existence.

Everything in existence is a part of *Universal Solidarity* (Total Relatedness).

Total Relatedness represents the material existence of infinite interactions.

In *universal solidarity* reside all times (past, present, future),[16] all things, all interactions.

Nothing exists outside of *universal solidarity*.

The concept of *universal solidarity* includes / covers / integrates all infinities in action.

Actual infinities will bring about infinities to come.

All we know is just a portion of *universal solidarity,* but we know that *total relatedness* is occurring.

[16] Ibid note 15 (on time).

Our knowledge *on* Total Relatedness (TR) is very little, but our knowledge *of* TR is ample.

Our knowledge of TR is itself a part of TR.

The concept of TR is itself a necessary element of increasing knowledge of TR. It is thanks to this latter that we can determine the extent of our role as part of TR and learn how to uplift our existential level in the universe to a higher operational capability. This is the historical path for an upgrade and progress that will give us more freedoms and capacities.

Our existential ascension will define how capable we are of changing, manipulating and modifying the process of interactions in the universe.

This trail to be climbed is limitless, so although there wouldn't be any end for this process, we could reach material levels where we would discover and invent new forms of matter.

These new discoveries and inventions would create new chains of events, generating more intelligent forms of being. It is thinkable that at a given moment,

there will be new forms of existence where we set rules for adding new existential components to TR (total relatedness). This is an infinite journey of creation (infinite human existential creation).

While there is no limit to this voyage, we could imagine how the things that are not possible—according to the physical laws of the current universe—will become likely in the new forms of material existence, including any odd idea that sounds, at present, impossible. This includes but is not limited to, for instance, realizing one of the obsessions of human beings, namely eternal life.

Here it's a question of eternal life thanks to all the knowledge, power, intelligence and capabilities we will acquire to create any new form of matter within existence.

Will everyone be a God?

**

Chapter III:
Structure of the Infinite

From any angle, aspect or dimension, matter is infinite. This means that infinitude is the substance of matter. The infinity of matter includes endless interconnections between its components. Thus, any component is just the infinite interconnections of its subcomponents and it goes on for ver.

Matter = Endless interconnected components

The only reality of the matter is *interconnections* of particles, while a particle is, itself, nothing but interconnections of sub-particles, and a sub-particle is again composed of interconnections of sub-sub-particles, and this goes interminably.

Therefore, anything in the universe can be decomposed infinitely in either a macro or micro manner.

The interconnections between the components that constitute a phenomenon stand in the form of causal chains. Therefore, each component is composed of interlinked causal chains.

Whether you go through the microcosms inside a phenomenon or the macrocosms outside a phenomenon, the same structure can be found: endless interconnections between components and subcomponents in the form of *intercreating causal chains*.

By understanding and knowing these interconnected causal chains, any intelligent being could decompose a phenomenon systematically into its components, break each component down in its subcomponents and keep doing so infinitely.

At each stride of the endless causal chains, this intelligent being could find the component(s) or subcomponent(s) and their interconnection(s), which could be a commendable subset or segment, to get involved and alter them.

Everything can then be altered and modified by following its internal or external structure and its dominating rules.

To do that systematically, we need a methodology.

Infinitylogy should formulate a methodological framework that includes:

1. Generalizability: It should be applied to ALL things without exception (until we discover something that doesn't follow this generality).
2. Precision: It should represent infinity in a precise, accurate and detail-oriented way.
3. Practicability: It should be easily applicable and usable in any case.
4. Standardization: The method should have defined, though dynamic, standards that are easy to follow and repeat.
5. Quantifiable: The method should lean toward quantification of its steps and process so that it is measurable and correctible.
6. Predictability: The method should provide the ability to predict the results of its operative steps and sub-steps in order to be verifiable.
7. Controllability: The method should be controllable at any stage based on its quantifiable character.

8. Improvable: The method should remain open, flexible and in evolution to perfect its details and performance.

Besides these general characteristics, the methodology—or, perhaps, methodologies—of *Infinitylogy* should follow some principles with regard to its content and inclusiveness:

1)

Universal Solidarity: Any change in a set changes the whole set.

The difficulty in conceiving this is due to the fact that we reflexively think about observing change on a scale that is fit to our usual senses and perceptual capabilities. But Universal Solidarity is not a scalable reality; it's an infinitely expandable one. This is to say that any change at any part or any level of Existence causes, almost simultaneously, a set of changes in the levels that don't have any finite point, any limit, or any specific level. It means that change happens

where it can happen, not necessarily where it's perceptible to us.

The effectuation of a component occurs in a causal chain that is triggered as soon as a change occurs there, without any delay. The change goes deep in the chain until it finds the segment in which it can effectively affect other components. If we don't see the change happening, it's because we are dealing with a level of the chain that is not yet within the scope of our perception. Theoretical apprehension can replace physical perception until the former leads to the latter.

2)

Therefore, any causal chain is multidirectional and multilayered, with one direction or one layer perceptible to us, while the infinite multiple others may be initially untraceable by our sensorial capacities but are still materially ongoing.

3)

Any search for a solution to a problem could take an apparently expedient segment or element as a starting point. It then keeps going, and wherever the solution is found, we stay there; otherwise, we can carry on in one of these four directions:

1) A more detailed approach (micro deeper level) ⇓
2) Less detailed approach (macro upper level) ⇑
3) Horizontal anterior path (backward dialectical line) ⇐
4) Horizontal posterior path (forward causal chain) ⇒

4)

The evolution from an organic to a non-organic being, which we usually call death, could be translated as a decrement in terms of complexity and functionality (capabilities).

A move from a non-organic to an organic thing represents a course of increasing complexity and

functionality, i.e., a “forwarding point” that accounts for more capabilities of survival or development (progression).

In this sense, the death of an organic being is like a backward step of matter, while procreation is a forward step, since it makes matter more efficient in its operation on itself and its surrounding elements.

That’s why, when we extend the lifespan of finite matter, we give it the possibility of acquiring more complexity and then more capability for creating, improving and gaining a kind of “perfection”—in the most functional meaning of the term and nothing beyond. This trend is functional but not purposeful. It means that if the matter looks for more complexity, it’s due to a mechanical result of its previous structural density. The sole exception, but only in form, is when matter is joined by intelligence and will then be, so-called purposefully, looking for a more elaborated and targeted intricacy of its organic structure. But at the end of the day, we shouldn’t

forget that intelligence, itself, is nothing but a high level of operative complex ability of a setting for analyzing, understanding, conceiving and creating things. Every quality that we call "*intelligence*", or something similar, is but a composite quantity.

What is *Infinity*?

Infinity is the active endlessness of matter.[17] Matter is boundless in two aspects: 1) its structuring constituents and 2) the relationships between these ingredients.

Every phenomenon is built of components. Each component is built of sub-components. Among and between the components and sub-components of each phenomenon, there are endless interrelationships in the form of unbounded causal chains.

Every phenomenon is itself a component of another set. And each component is, itself, a constituent that

[17] We can also say: Infinity is the endless action of matter (or) Infinity is the endless movement of the structures of matter.

includes the subcomponents. This simultaneous trend toward both the macro-level and micro-level proceeds infinitely.

By going in one of these directions, each phenomenon becomes a part of a causal chain that shapes other phenomena. Matter is not anything else but the combination of endless interconnected causal chains. *Matter is intercreating creations*: i.e., interrelated creating-created causal chains. There is no distinction between the stages of *creating* and *being created* if we take into consideration the infinite levels of the structures in action.

By knowing and mastering parts of these causal chains, any intelligent beings, including the human ones, could modify them and obtain, as a result, the production or reproduction of any targeted object.

To be able to do this, humans need three elements:

1) A philosophical view on this configuration to understand its existence,

2) A scientific framework that produces the knowledge of this intervention,
3) A technological set of tools to make this intervention operationally feasible and effective.

The only reality that shapes *Existence*, *Matter*, the *Universe*, the *World* and *Everything* is the *infinite interrelated components*. Adding any labeling or vision to this wouldn't change the operational sameness of all things at any macro or micro level in the universe. The sole reality that goes beyond any sense, conception or perception of an intelligent being, whatever or whoever it is, is the intersected components everywhere in an infinite ongoing process of interactions.

This is, in some way, a version of the Theory of Everything (TEO). *Existence* is nothing but the endless interlinked causal chains that compose the structure of every single phenomenon we could find there. To last, any causal chain has to trigger

other causal chains and each one keeps doing the same, endlessly.

The TEO can be summarized as follows: the necessity of creating something to be created. The TEO is then *the necessity of making something exist in order to exist*.

In sum, in the course of its creation, anything creates other things.

We could also summarize the TEO as *an infinite necessary intercreating*.

This similarity of the structure of existence's members enables us to apply one single law for understanding and manipulating everything in the universe: interlinked components—shaping intercreating causal chains—structure the universe.

The interlinked components structure the universe.

Existence: *Endless intercreating interconnected components*

Until the day we discover the "*metamaterial*", there would be nothing else beyond this.

This sole reality is not only knowable but changeable, since it is able to evolve permanently. A successful intervention by a human or any intelligent being thus requires simply going along with the inescapable changes that occur ceaselessly everywhere.

Operating on infinitude

When it comes to intervening in Infinitude, we first have to identify the main creating causal chain of a given phenomenon with its primary core components and their interconnections. Once we have that, we should explore each component of the first and main selected segment of the causal chain. From this exploration, we can obtain a structural map of the partial infinite causal chains that compose a phenomenon. After this map—which should be as detailed as possible—we can identify and localize where and on which

element(s) we should and could exercise the targeted modifying interference. It is obvious that to create this interference, we need to possess the necessary tools and technical know-how to operate.

The above approach needs many preliminary theoretical and practical gears. Before anything else, to set this approach to infinity upon a scientific basis, we need an abstract theoretical frame: *dynamic mathematics*.

This is the mathematics that could dynamically adjust its principles, logic and algorithms when attacking a problem by solving a fluctuating and scalable equation. The dynamic mathematics performs and operates actively; such a mathematics can come along with the constant modification of each variable of the equation and adjust itself with the flexibility of the reality the equation represents.

This dynamic mathematics requires, however, a few codes to operate actively.

**

Chapter IV:
Primary Principles of Dynamic Mathematics

In an evolving mathematics, the result of an operation is not a single or a definitive one but only the one that our chosen operation makes possible. But we could imagine that countless other potential outcomes are there in reality.

So, in this kind of mathematics, while we focus on one result related to our operative preferences in calculations, we are aware that, in reality, many changes are happening beyond the capacity of our perception and calculations.

Therefore, dynamic mathematics states that:

$1+1 = \infty*\infty$

$2+1 = (\infty*\infty)*\infty$

$3+1 = (\infty*\infty*\infty)*\infty$

$1-1 = \infty*\infty$

Therefore, the reality of the actual certainty of all operations is:

the infinite possible statuses

times

the infinite possible statuses.

The classic mathematics are consequently turning out to be our invention—an invention that expresses a static perception of the dynamic unbounded complexity of the actual reality.

The reason that reality is apparently answering to our static mathematical calculations is that we deliberately consider that reality as the full and total materialization of our calculations, whereas it is just one of the infinite replies possible.

Our actual material human existence is constrained by the limitations of our senses and perception. The more dynamic this latter will be, the more adapted we will be to deal with the infinitude that is operant in the actuality of matter.

If we could redefine the principles of mathematics with the inclusion and implementation of infinitude,

that mathematics would profoundly change our vision and our existence.

Mathematics and Numbers

Dynamic mathematics is based on a quality of *irrational numbers*, i.e., that they go forever.

Since matter is structurally dynamic and evolving, any number is within itself a *real number* capable of transforming into any of the following:

- Whole numbers
- Natural numbers
- Integers
- Rational numbers
- Irrational numbers

In evolving mathematics, any number becomes an irrational number in fact. Its quantity and quality interact to become a restless *irrational number*.

Any calculation is then just a frame photo / picture of a long and endless movie / movement / process.

The number goes up and down. It never stops. It includes infinite fractions. It changes all the time.

All of these characteristics are due to the interaction of a number with other numbers through these operations.

What we could consider the result is just one of the infinite changes the equation is going through.

The perception of the stability of the result is just a consequence of the interference of our consciousness, which aims to ignore the evolving situation and to consider it deliberately as a fixed one. [18]

The evolving math is the tool we need to organize our existential journey so that we can become dynamically moving in harmony with the evolving universe to experience eternity.

[18] This is why we lag behind the evolution of the surrounding universe and, at a given moment, we are out / dead / surprised. If we could adjust our view with the evolution of the actual situation, we will go along with the universe and then we won't undergo any distancing to age and to die. We will then experience a kind of eternity.

The passage from the static to the evolving/dynamic mathematics could be a long and progressive process in which we could readjust ourselves, as much as possible, with the evolving universe.

Here are some primary rules to establish the future principles of dynamic mathematics:

Every phenomenon in the universe has the following status:

Roles:

- Every phenomenon has an Effect role.
- Every phenomenon has a Cause role.

Cause	Effect

P.S. Relationships between *Cause* and *Effect* are reciprocated.

Directions:

- Causal chains are either *Vertical* or *Horizontal*
    - The Vertical causal chain represents the relations of a phenomenon with the things laid in an upper or lower echelon of its own structural / structuring levels (micro and macro levels).
    - The Horizontal causal chain operates at the same structural / structuring level.

Horizontal	Vertical

P.S. The definition and the determination of *vertical* and *horizontal* are highly relative, case by case, and evolving.

Locations:

- A Vertical causal chain is either:
  - Internal: inside a set as the hierarchy of subcomponents.
  - External: outside a set as a subcomponent of a bigger set.
- A Horizontal causal chain is either:
  - Internal: inside a set as its similar interrelated sub-components.
  - External: outside a set as its interrelations with similar sets.

External	Internal

P.S. “Outside” and “inside” depend on what we consider as such by determining the features that physically demarcate a phenomenon.

Sequencing

- Each causal connection can happen in one of these three sequences:

- *Before* another Cause makes the effect happen,
- *Before* another Effect comes up by the same cause,
- *After* another Cause acts to make the [same] effect happen,
- *After* another Effect [of the same cause] comes up,
- A cause can make an effect happen at the same time (*concurrently*) with another Cause,
- An effect that acts with another one at the same time (simultaneously).

Before	After	Simultaneous

Necessity / Possibility

- Each connection is either a:
  - *Necessary* Cause: The cause acts unavoidably,

- Necessary Effect: The effect happens unavoidably,
- *Possible* cause: The cause acts as a possibility or an accident (avoidably),
- Possible effect: The effect happens as an option or accident (avoidably).

Necessity	Possibility

PS: We can consider the interchangeability as well as the multitude of the roles.

Connectedness

- The connectedness between phenomena could be as follows:
  - *Direct*: The relation is straightforward without any intermediary,[19]
  - *Indirect*: The relation is not straightforward and happens by some intermediary,
  - Partially both (*mixture*).

[19] We should be aware that "any" here and from an infinitude-oriented point of view could not be absolute. But for the sake of establishing an analytical framework, we present it as such with some tolerance.

Interconnections between six sets

While we do not pretend that these statuses are comprehensive or absolute, we could say that the principles of dynamic mathematics will include a combination of such statuses to take into account the variety of spatial and functional statuses:

1) Roles: Cause / Effect
2) Directions: Horizontal / Vertical
3) Locations: Inside / Outside
4) Sequencing: Before / After / Simultaneous
5) Necessity: Necessity / Possibility
6) Connectedness: Direct / Indirect / Partially both

A first step is to combine these criteria to get an idea of the quantity of certain possible combinations:

I) Sets of Binary Combinations

First, let's see what the combined standings would be coming from two correlated statuses:

1) Role * Direction

	Horizontal	Vertical
Cause	S1	S2
Effect	S3	S4

- S1 = *Cause* in a *Horizontal* causal chain.
- S2 = *Cause* in a *Vertical* causal chain.
- S3 = *Effect* in a *Horizontal* causal chain.
- S4 = *Effect* in a *Vertical* causal chain.

Any phenomenon possesses all four statuses at the same time.

(* We use the Factorial to calculate the amount of the standings that could come from the interconnections of these statuses.)

$$4! = 4*3*2*1 = 24$$

2) Role * Location

	External	Internal
Cause	S5	S6
Effect	S7	S8

- S5 = *Cause* in a causal chain that goes *Outside* a phenomenon.
- S6 = *Cause* in a causal chain that happens *Inside* a phenomenon.
- S7 = *Effect* in a causal chain that goes *Outside* a phenomenon.
- S8 = *Effect* in a causal chain that happens *Inside* a phenomenon.

Every phenomenon is in these four situations at the same time:

$$4! = 4*3*2*1 = 24$$

3) Role * Sequencing

	Before	After	Simultaneous
Cause	S9	S10	S11
Effect	S12	S13	S14

- S9 = *Cause* in a causal chain that comes *Before* another cause.

- S10 = *Cause* in a causal chain that comes *After* another cause.
- S11 = *Cause* in a causal chain that comes *Simultaneously* with another cause.
- S12 = *Effect* in a causal chain that happens *After* another effect will happen.
- S13 = *Effect* in causal chain that happens *After* another effect happened.
- S14 = *Effect* in causal chain that happens *Simultaneously* with another effect.

Depending on the structural level, any phenomenon is in, totally or partially, all of these six possible statuses.

$$6! = 6*5*4*3*2*1 = 720$$

4) Role * Necessity

	Necessity	Possibility
Cause	S15	S16
Effect	S17	S18

- S15 = *Cause* in a causal chain that *Necessarily* acts.
- S16 = *Cause* in a causal chain that *Possibly* acts.

- S17 = *Effect* in a causal chain that *Necessarily* happens.
- S18 = *Effect* in a causal chain that *Possibly* happens.

Any phenomenon occurs in all of these four potentials at a given moment.

$$4! = 4*3*2*1 = 24$$

5) Role * Connectedness

	Direct	Indirect
Cause	S19	S20
Effect	S21	S22

- S19 = *Cause* in a causal chain that acts *Directly* on an effect.
- S20 = *Cause* in a causal chain that acts *Indirectly* on an effect.
- S21 = *Effect* in a causal chain that is the *Direct* result of its cause.

- S22 = *Effect* in a causal chain that is the *Indirect* result of its cause.

Any phenomenon is all four of these possibilities at a given moment.

$$4! = 4*3*2*1 = 24$$

Role / Direction / Location	Horizontal		Vertical	
	External	Internal	External	Internal
Cause	S23	S24	S25	S26
Effect	S27	S28	S29	S30

These sets could also be combined in more complex models with more than two variables. First, an example with three variables:

II) Triple Combinations

- S23 = *Cause* in a *Horizontal* causal chain that acts *Outside* a phenomenon.
- S24 = *Cause* in a *Horizontal* causal chain that acts *Inside* a phenomenon.
- S25 = *Cause* in a *Vertical* causal chain that acts *Outside* a phenomenon.

- S26 = *Cause* in a *Vertical* causal chain that acts *Inside* a phenomenon.
- S27 = *Effect* in a *Horizontal* causal chain that happens *Outside* a phenomenon.
- S28 = *Effect* in a *Horizontal* causal chain that happens *Inside* a phenomenon.
- S29 = *Effect* in a *Vertical* causal chain that happens *Outside* a phenomenon.
- S30 = *Effect* in a *Vertical* causal chain that happens *Inside* a phenomenon.

Any phenomenon is in all of these statuses at a given moment.

$$4!*4!$$

$$24 * 24 = 576$$

III) Quadruple Combinations

We could now expand the number of the statuses and see the variation of their combinations. Let's see just one example of this quadruple case:

Role / Direction / Necessity / Sequenceing		Before		After		Simultaneous	
		Necessary	Possibility	Necessary	Possibility	Necessary	Possibility
Cause	Horizontal	S1	S2	S3	S4	S5	S6
	Vertical	S7	S8	S9	S10	S11	S12
Effect	Horizontal	S13	S14	S15	S16	S17	S18
	Vertical	S19	S20	S21	S22	S23	S24

S1 = is a *Cause* in a *Horizontal* causal chain that *Necessarily* acts *Before* another cause.

S2 = is a *Cause* in a *Horizontal* causal chain that *Possibly* acts *Before* another cause.

S3 = is a *Cause* in a *Horizontal* chain that *Necessarily* acts *After* another cause.

S4 = is a *Cause* in a *Horizontal* chain that *Possibly* acts *After* another cause.

S5 = is a *Cause* in a *Horizontal* chain that *Necessarily* acts *Simultaneously* with another cause.

S6 = is a *Cause* in a *Horizontal* chain that *Possibly* acts *Simultaneously* with another cause.

S7 = is a *Cause* in a *Vertical* chain that *Necessarily* acts *Before* another cause.

S8 = is a *Cause* in a *Vertical* causal chain that *Possibly* acts *Before* another cause.

S9 = is a *Cause* in a *Vertical* chain that *Necessarily* acts *After* another cause.

S10 = is a *Cause* in a *Vertical* chain that *Possibly* acts *After* another cause.

S11 = is a *Cause* in a *Vertical* chain that *Necessarily* acts *Simultaneously* with another cause.

S12 = is a *Cause* in a *Vertical* chain that *Possibly* acts *Simultaneously* with another cause.

S13 = is an *Effect* in a *Horizontal* chain that *Necessarily* happens *Before* another effect.

S14 = is an *Effect* in a *Horizontal* chain that *Possibly* happens *Before* another effect.

S15 = is an *Effect* in a *Horizontal* chain that *Necessarily* happens *After* another effect.

S16 = is an *Effect* in a *Horizontal* chain that *Possibly* happens *After* another effect.

S17 = is an *Effect* in a *Horizontal* chain that *Necessarily* happens *Simultaneously* with another effect.

S18 = is an *Effect* in a *Horizontal* chain that *Possibly* happens *Simultaneously* with another effect.

S19 = is an *Effect* in a *Vertical* chain that *Necessarily* happens *Before* another effect.

S20 = is an *Effect* in a *Vertical* chain that *Possibly* happens *Before* another effect.

S21 = is an *Effect* in a *Vertical* chain that *Necessarily* happens *After* another effect.

S22 = is an *Effect* in a *Vertical* chain that *Possibly* happens *Before* another effect.

S23 = is an *Effect* in a *Vertical* chain that *Necessarily* happens *Simultaneously* with another effect.

S24 = is an *Effect* in a *Vertical* chain that *Possibly* happen *Simultaneously* with another effect.

So, for these four statuses and their varied combinations, we can get a huge number of standings:

6!+9!+6!+6!+6!+6!

720+ 362880 +720+720+720+720

= 366468!

= 2.07503317 E+1879889[20]

Even though humans can be focused on one or a few of these huge amounts of standings, each phenomenon has <u>all</u> of them simultaneously with regard to other phenomena. Matter is then a combination of its components with all of these roles in a permanent interrelatedness—i.e., infinite.

*

It is obvious that we could extend these combinations with more statuses, like the two below cases where we have statuses five and six combined.

*

[20] If we wanted to publish the normal number of this result here, it would have token some 200 pages of this book.

III) Quintuple Combinations

			Before		After		Simultaneous	
			Necessary	Possibility	Necessary	Possibility	Necessary	Possibility
Cause	Horizontal	Direct	S1	S2	S3	S4	S5	S6
		Indirect	S7	S8	S9	S10	S11	S12
	Vertical	Direct	S13	S14	S15	S16	S17	S18
		Indirect	S19	S20	S21	S22	S23	S24
Effect	Horizontal	Direct	S25	S26	S27	S28	S29	S30
		Indirect	S31	S32	S33	S34	S35	S36
	Vertical	Direct	S37	S38	S39	S40	S41	S42
		Indirect	S43	S44	S45	S46	S47	S48

These are some examples of the lessons of the statuses in the above table:

S1 = is a *Direct Cause* in a *Horizontal* causal chain that *Necessarily* acts *Before* another cause to produce a given effect.

S2 = is a *Direct Cause* in a *Horizontal* causal chain that *Possibly* acts *Before* another cause to produce a given effect.

...

*

III) Sextuple Combinations

Combining all six sets:

			Internal						External					
			Necessity			Possibility			Necessity			Possibility		
			Before	After	Simultaneous	Before	After	Simultaneous	Before	After	Simultaneous	Before	After	Simultaneous
Cause	Horizontal	Direct	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
		Indirect	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24
	Vertical	Direct	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36
		Indirect	S37	S38	S39	S40	S41	S42	S43	S44	S45	S46	S47	S48
Effect	Horizontal	Direct	S49	S50	S51	S52	S53	S54	S55	S56	S57	S58	S59	S60
		Indirect	S61	S62	S63	S64	S65	S66	S67	S68	S69	S70	S71	S72
	Vertical	Direct	S73	S74	S75	S76	S77	S78	S79	S80	S81	S82	S83	S84
		Indirect	S85	S86	S87	S88	S89	S90	S91	S92	S93	S94	S95	S96

These are some examples of the lessons of the statuses in the above table:

S1 = A *Cause* in a *Horizontal Internal* causal chain that acts *Directly* on an effect by *Necessity Before* another cause.

S8 = A *Cause* in a *Horizontal Internal* causal chain that acts *Indirectly* on an effect by *Necessity After* another cause.

S35 = An *Effect* in a *Horizontal External* causal chain that is an *Indirect* result of a cause that *Possibly* happened *After* another effect.

S48 = An *Effect* in a *Vertical External* causal chain that is an *Indirect* result of a cause and *Possibly* happens at the same time as another effect.

*

Deduction

Any phenomenon is integrated in the *Universal Solidarity* and has infinite structural levels interacting with all the other structural levels of the adjacent phenomena; now, we can imagine that, in the frame of the suggested above model of statuses, all the combinations that a phenomenon deals with at the same time extended to the 96 statuses. This means that the total number of statuses that a

phenomenon could have for playing these roles is equal to 96!

$$1E+150.$$

Now, we should imagine that each phenomenon, in relation to others, is playing with all these combinations. Therefore, the interrelations of just two phenomena will give us a number like this one:

$$96! * 96! = 1E+150 * 1E+150 = 9.8E+299$$

This huge number is just the result of the interconnections of two phenomena within a given causal chain and according to the artificially simplistic model of statuses we conceived. Now we have to imagine how big the number would be in a more complex model, with a higher number of combinations? Can one have any idea of all the components of the universe interacting with each other at any moment? This is *infinity*.

Concretely, we get three meanings of *infinity*:

1. Infinitude in the number of components,

2. Infinitude in the number of statuses each component is occupying,
3. Infinitude in the number of interactions between the components while changing each of these statuses.

One aspect of *infinity* represents the immensity of the universe and its elements, and another one represents the huge, interweaved complexity of the dynamism that is going on inside.

Things get vaster when we realize that through these infinite number of interconnections, all the phenomena in the universe are intercreating each other, unstoppably, permanently and infinitely. This is what we call *Universal Solidarity* and its *infinity*.

Therefore, what in static (classic) mathematics is just the number 1 is in the dynamic mathematics n!, or, for the case of our table with six arbitrary sets of statuses,

$$96! = 9.916779348 \text{ E+}149$$

The reduction of a massive unit[21] to just 1 is the most absurd thing that science or mathematics could do once we get some idea of the universal dynamic complexity of each phenomenon.

What, then, could dynamic mathematics do?

As the numbers are showing their limitations in expressing the dynamism of the complex process of being, we need another set of tools that could embrace, somehow and to some extent, this complexity.

As every phenomenon is the result / expression / crystallization of a complex set of elements, we should use signs that can represent, not the quantity of a thing, but its structural intricacy. Matter's complexity needs to be expressed in terms of multivariable reality and its becoming / alteration / evolution.

[21] 96! = 9167793487094968920957140154189380115818364865126779544437605483849222280909149998768947603700074898207509473896575430563987456000000000000000000000

Principles of Dynamic Mathematics

Dynamic mathematics needs its own logic and principles, which are the following:

- A phenomenon is an infinitely changing structure.
- A phenomenon is a changing structure with infinite components.
- A phenomenon is a changing structure with infinite components and endless relationships between them.
- Therefore, a phenomenon is an infinite changing structure with infinite relationships between infinite components.
- In a word, A phenomenon is infinite.
- Every phenomenon is an infinitude.
- Infinity cannot be expressed by any number but by a concept that should include infinitude.
- Infinitude is the uncountable components in endless changing relationships.
- Infinity happens everywhere and in anything.

- Nothing could be without being infinite.
- Nothing could exist but infinitely.
- Everything is infinite or is not.
- Infinity is the only reality, and all other things are just manifestations of this reality.
- Dynamic mathematics should touch, as much as possible, the infinity that is going on in anything.
- By expressing infinity, we get a concept of it and not its reality, since its reality is never stationary, however statically conceivable it may be.
- The concept of infinity is the most general idea, with the most detailed view of what happens everywhere in the universe.

While *Infinitylogy* could concede the static anthropocentric approach to things to classic mathematics, we could focus on understanding how *infinity* represents the dynamism of matter in order to ease the way we can handle it.

So, *dynamic mathematics* is the *mathematics of infinity* and could not have the same logic nor the same expressive tools as static mathematics.

For instance, we could suggest a few basic assertions:

n!*n! = n!

x!*y! = z!

where

x = (x!*y!=z!)

y = (x!*y!=z!)

z = (x!*y!=z!)

Despite its appearance, there is no more "*circular reference*" here since this latter was attached to the mechanical approach to facts in the static mathematics. Where it's a question of understanding infinitude, there is no room for the frozen logic of static mathematics.

Multiplication would be the only valuable operation remaining from the static mathematics' operations,

since it expresses the ongoing cross-connections of phenomena.[22]

Consistency of the structure and logic of dynamic mathematics:

Dynamic mathematics would not limit itself to quantities since infinitude could not be stated by any quantity, whatsoever. This mathematics should be able to instrumentalize quantity in order to show that infinitude is neither any precise nor determined numeral fact, even though our anthropocentric comprehension remains quantitative. Once we realize that infinitude goes beyond quantity, we deal with the triangle of complexity, dynamism and interconnection.

[22] As we used the operation called factorial in this presentation, we will try later and in a separate work to see whether the development of the following assertions could be relevant:

- Any factorial is a product of its sub-factorials.
- Any sub-factorial is a product of its sub-sub factorials.
- …And it keeps going endlessly.

Dynamic mathematics is a phenomenological mathematics rather than a mechanical-quantitative one since its core object is no longer any conceivable number of things but their immeasurable intricate structure with its dynamism.

That's why we need the codes and signs that express these qualities:

I = Infinity

Concept	Definition	Sign
Infinity	Endlessness of Components and Interactions of matter.	I

i = infinite

Concept	*Definition*	*Formula*
infinite	The endless	i

E = Evolving

Concept	*Definition*	*Formula*
Evolving	Permanent alteration due to accumulation	E

Co = Component

Concept	*Definition*	*Formula*
Component	A set of interacting causal chains shaping a structure able to interact with other components as an entity	CO

In = Interconnection

Concept	*Definition*	*Formula*
Interconnection	Intercreative interactions between causal chains within an entity (component).	In

First set of equations in dynamic mathematics

Formula	*Lecture*
I = iCo*iIn	Infinity equals infinite components times infinite interconnections.

Formula	*Lecture*
iE = iCo*iIn	Infinite Evolution equals infinite components times infinite interconnections.

Formula	*Lecture*
iCo = i[sub]Co*iIn	Infinite Component equals infinite subcomponents times infinite interconnections.

Formula	*Lecture*
iIn = iCo*iIn	Infinite Interconnection equals the infinite components times the infinite interconnections.

Formula	*Lecture*
iCo = iE	Infinite component equals infinite evolution.[23]

Formula	*Lecture*
iIn = iE	Infinite Interconnection equals infinite evolution.

[23] This is another way to express what is present in this book as the Theory of Everything (TOE), where we say that everything, to be created, needs to create something else.

What we saw in this chapter are the premises of what could be, one day, the fundamentals of the dynamic mathematics.

We place an emphasis on the fact that all these assertions need verification by the specialized multidisciplinary teams that could assess the relevancy of these suggestions.

**

Chapter V:

Ways to Make Infinitylogy Operational

We call *ALL* what covers *Existence* and something else that could be but that we can't verify (called metamaterial). But *Existence* covers anything, including the *universe*. The *Universe* is made of *matter*. *Matter* is made up of endless entangled *intercreating causal chains*. The causal chains are made up of *components* and of their cause-effect relationships. Any *causal chain* is 1) Endless, 2) Without origin, and 3) Permanently Evolving.

Matter is composed of *components* and each component is made of interrelated *sub-components*. Each sub-component is again a component...

Organization of matter doesn't have any kind of intelligence or purpose but is a purely functional apparatus. Any material match of components could work in the universe if it could be functionally and mechanically done.

We kept *Infinity* as a reality that is materially unreachable but conceptually accessible. By using

this conceptual approach, we could partially touch on the materiality of infinity as well. There is immense potential for humanity in the exploration of infinitude.

Matter is infinite; so is the universe, and, therefore, so are our world and ourselves. How can we relate the universal infinity with the human infinity so that we can become the source of an endless creation?

Our proposition is, on the one hand, to use the *Infinitylogy* to produce a deep knowledge of infinity and, on the other hand, to follow the *Infinitism*, which is a philosophical theory emphasizing the usage of the infinite dynamism of any phenomenon in order to engender production and reproduction of whatever we desire.

Infinitylogy

Infinitylogy is the production of knowledge on infinity. These are the principles of *Infinitylogy*:

1) *Existence* includes anything material.

2) The *Universe* is made of matter.
3) *Matter* is the endless number of interconnected components.
4) A *component* is nothing but a set of ongoing intercreational processes.
5) As any component is a set of micro-interrelations, we can say that:
6) The substance of matter is just interrelations.
7) Matter is the interrelation of micro-interrelations.
8) Any phenomenon is composed of a set of interrelations of micro-interrelations.
9) Any phenomenon is composed of a set of intercreations of micro-intercreations.
10) The main characteristic of any phenomenon is its structural networking.
11) Because of the structural networking of any phenomenon, we can call this latter a NetEntity.
12) A *Netentity* is a network of networks.

13) Therefore, *matter* is a network of networks.
14) Matter is infinite interconnected netentities.
15) Matter is infinite intercreating netentities.
16) Any macro-netentity is composed of infinite micro-netentities and any micronetity is composed of infinite sub-netentities,
17) The structure of any Netentity (matter) is organized as a set of causal chains.
18) A causal chain denotes cause-and-effect interrelations between netentities.
19) A causal chain has no beginning or end.
20) Causal chains keep going in all directions, changing permanently and incessantly.
21) Any causal chain could be modified if its selves are taken into account.
22) A change in a causal chain can take place by anyone or anything that could take into account the following elements:
    a. The knowledge of the causal chain,

b. The knowledge of what components should be altered in the causal chain,
c. The technical ability to implement this alteration.

The above points are the basics for *Infinitylogy*; now let us review the principles of *Infinitism*:

1) Infinity is the inherent reality of matter.
2) Infinity means the infinitude of relationships that compose matter.
3) Infinitude of relationships also means infinite possibilities.
4) These possibilities are either actual or potential.
5) Any intelligent being could use the actual possibilities.
6) Any intelligent being could turn the potential possibilities into actual ones.
7) To turn a potential possibility into an actual one, one should work on causal chains.

8) By manipulating, conveniently, a causal chain, one can produce or reproduce anything.
9) Production is the process by which one turns a potential possibility into an actual one.
10) Reproduction is the process by which we duplicate, renew or maintain an actual possibility in the creating causal chains.
11) Intervention into the causal chain follows some rules:
    a. The causal chain is endless.
    b. Each component in the causal chain is *cause* and *effect* at the same time.
    c. Each cause could have one or more effects.
    d. Each cause could have an effect on its own or in association with others.

e. Each cause can have an effect directly or indirectly.
f. Any phenomenon in the causal chain influences and is influenced concurrently.
g. The influence comes from interrelations between phenomena.
h. A given causal chain is always one part of a phenomenon along with other causal chains.
i. Any phenomenon is the result of several interacting causal chains.
j. The intervention in a causal chain goes over a methodology consisting of the following:
    i. It arbitrarily limits the necessary scope of the unlimited causal chain.
    ii. Knowing the necessary scope with as much detail as possible. Including:

1. Components (cause/effect)
2. Causal relationships
3. Direction of relationships (Horizontal/Vertical)
4. Directness and indirectness of the relationship
5. Sequencing: Before, After, Simultaneous
6. Location of the relationships (External, Internal)
7. Necessity or Possibility of relationship

iii. Defining the theoretical frame of the intervention

iv. Identifying the section and the scope in which to intervene

v. Designing the project of the intervention with all steps and details

vi. Determining the technological tools for the intervention

vii. Managing the intervention as a project:

- Phase 1: Project Initiation
- Phase 2: Project Planning
- Phase 3: Project Execution
- Phase 4: Project Monitoring
- Phase 5: Project Closure

ii. Recording and transforming the experience in a piece of knowledge for the *Infinitylogy*.

As we can see, based on the idea of *Infinitism*, it would be possible to put an historic end to any scarcity once we know how to change the inner structure of any element in order to channel it into the desired outcome. This means that there would no longer be a need to leave the control of production to the producing causal chain in order to obtain what we want; we could purposely interfere in the process and make the necessary change to bring about the products we would like.

Infinitylogy would provide the necessary knowledge for doing this. But how?

Infinity in causal chains

Every causal chain is infinite. The *infinity* of causal chains means the endless cause-and-effect relationships between all the elements forming the chain. The number of elements, the number of relationships between them and the links with all other external elements are just uncountable and interminable. Therefore, for any intelligent being, it would be possible to take knowledge of one part (scope) of this everlasting chain.

By a theory, a methodology and a software utilizing Artificial Intelligence (AI), we would be able to determine the useful scope of an endless causal chain in compliance with the outcome of our intervention. Such an undertaking requires the following steps.

1) Methodology
    a. We take one single component as the departing point.
    b. We consider that component, first, as an *effect* and we look for its cause(s).

c. We consider each *cause*, itself, as an effect and look for its cause(s).
d. We follow this path as long as we have verified or verifiable data on the constituents of that path (portion of the chain).
e. This same process will be applied to any other elements we find in our way as long as and as much as possible[24] (or) necessary.[25]
f. Then we go back to the initial element and this time, we consider it a *cause* and look for its effects.
g. Each effect should also be seen as a cause and we should look for its effects.
h. We continue on this path as long as we have verified and verifiable data.

[24] Possible for the automated part of the process.
[25] Necessary for the conscious part of the process.

i. We go through this path as long as possible and as much as possible (or necessary).
j. If necessary, for each case of *Cause* or *Effect*, we should be able to determine, somehow, what the *actual* and *potential* possibilities are:
    i. For *cause*: looking for what it's doing (actual) or it could[26] do (potential).
    ii. For effect: figuring out if it's made as it happened (actual) or as it could happen (potential).
k. Based on the identification of actual and potential possibilities, we determine:
    i. What could / should be done to maintain the advantageous actual occurrence(s)? (Reproduction.)
    ii. What could / should be done to change / stop / slow down the

[26] This "could" could be translated to "should" based on our will and purpose.

disadvantageous actual occurrence(s)? (Assuring continued reproduction.)

iii. What could / should be done to activate / implement the advantageous potential occurrence(s)? (Production.)

l. Preparing a list of changes or actions that should be done for each of the three above cases:

i. What are theoretically possible or practically feasible changes for maintaining the advantageous actual occurrence(s)?

ii. What are theoretically possible or practically feasible changes for changing / stopping / slowing the disadvantageous actual occurrence(s)?

iii. What are theoretically possible or practically feasible changes for

activating / implementing the advantageous potential occurrence(s)?

2) Software (program)

a. Algorithms will meticulously follow the characteristics and logic of the above methodology:

i. Identifying the initial element

ii. Following the causal chain in the path that considers the initial element as an effect

iii. Repeating the above mechanism(s) for any *cause* found in the path (as long as there are data fed to the program).

iv. Following the causal chain in the path that considers the initial element as *cause*.

v. Repeating the above mechanism(s) for any *effect* found in the path (as

much as there are data fed to the program[27]).

vi. Recognition of any event in the chain as one of these cases:
    1. Assuring / Providing the current expected effect,
    2. Empowering / Reinforcing the current expected effect,
    3. Weakening / Decreasing the current expected effect,
    4. Being neutral regarding the current expected effect,
    5. Having potential for empowering the current expected effect,
    6. Having potential for weakening the current expected effect,

[27] It should be defined where and when the input (quantity/quality of data) is too poor to stop the exploration of the causal path.

7. Having potential for creating the nonexistent desired effect.

vii. Classifying all the elements in one of these categories.

viii. Implementing the categories in the change-equation.

ix. Getting the result of the equation and implementing it in a model of action.

x. Transforming the model of action in a professional project of change.

3) Artificial Intelligence (AI)

The application of AI could involve the following steps and mechanisms:

1) Finding the data in a hybrid (open / closed) source of information
2) Dispatching data in different sections of the process
3) Analyzing the data coming from the different steps of the process

4) Synthesizing and producing the data necessary for the diverse variable of the equation.

Explanation:

One of the fields of AI that could be useful for building this software is E-GAN (Evolutionary Generative Adversarial Network).[28]

What is E-GAN?

There are a few features mentioned that could show some relevance for what we want to do:

- *"EGAN memory evolves at every evolution."*

This "evolving memory" is convenient for the definition of matter, which is composed of the incessant changing interrelations between its components. Therefore, it could also account for the case of *dynamic mathematics*, which looks for continuously altering realities.

[28] Source: https://arxiv.org/pdf/1803.00657v1.pdf

- "*Growing things don't take the same path every time*".

This is ideal for us, since we know that based on the infinitude of change, there wouldn't be any identical path ever. So, our analytical tool (software) should be able to integrate this characteristic of *matter* and trace the changing pathways that are ceaselessly shifting.

- "*The paths get to be slightly modified*".

Through the concept of *Universal Solidarity*, we know that each time a process is, so-called, "identically" produced or reproduced, there is some infinitesimal modification integrated by the whole parameters that influence the process. Should we be capable of conceiving a processing / analyzing a system capable of incorporating these tiny parts of the change each time a course of production is repeated? Why is this a challenge?

- "*Because statistics is a math of chances and not a math of exactness*."

Here, the term "chance" would refer to all the elements that are interacting and Intercreating. This is making a difference in the seemingly "identical" courses. These latter are, in fact, dissimilar, but we don't know enough about them, since it's a question of infinitesimal[29] changes at their infinite scope.[30]

The purpose of this choice of pathway in which to intervene is important, since the objective is:

- "Finding *a better path: path of least resistance*".

For our *infinitist* purpose, a better path is the one that could assure the production or reproduction of a desired thing.

In this way:

[29] Smallness of Measures.
[30] Range.

- "*The next generation of the model mutates and evolves toward the path its ancestor found in error*".

This is quite good for predicting the patterns that could be identified as necessary to avoid or, on the contrary, reinforce as a possible path of change in the causal chain.

5) Unlimited Training of the Infinity Processing System (IPS)

IPS is a system of analysis and simulation that will process the data of a given phenomenon in an unlimited, continuous and endless way so that it can anticipate any change and suggest new models of action.

The data are fed by humans and the "AI environment". It acts as follows:[31]

[31] More and more common in the ML lifecycle is Active Learning. The ML Active Learning Cycle has six steps:

1) Training Data. An ML model must have data to train on.
2) Build ML Model. The model is created.
3) Model Predictions. The model makes predictions.

1) The characteristics of a given causal chain are fed into the IPS as *input* data.
    a. These characteristics include the following information:[32]
        1) Role: *Cause – Effect* role of each element at a given moment (two roles)
        2) Contact: *Direct or Indirect* relationships between Cause and Effect (two ways)
        3) Direction: *Horizontal or Vertical* interrelationships between two phenomena (two directions)
        4) Location: *Inside or Outside* position of a relationship (two places)
        5) Sequencing: *Before/After/Simultaneous* steps of playing roles of cause or effect

4) Feedback. The model gets feedback on its prediction from human or environmental stimuli.
5) Feedback becomes data. Feedback is submitted back to a data repository.
6) Repeat Step 1. Continue to iterate on this cycle.
[source: www.bmc.com)

[32] These elements are just a few characteristic examples.

compared to another step (three sequences)

6) Obligation: *Necessary / Possibility* role played by the element in a given situation (two statuses)
7) Scope of effectivity: *Great, Average, Small* (Total relative, Regular incomplete, Minor). (Three statuses.)[33]

2) A model is created based on the combination of these characteristics:
   a. Every phenomenon is labeled with a unique code.
   b. Every phenomenon is identified by these eight characteristics. (Evolving among *4.37763E+26* possibilities at a

[33] While we cannot calculate the effectivity accurately / specifically, we could estimate it generally.

Great								
Great			Average			Small		
Great	Average	Small	Great	Average	Small	Great	Average	Small

given moment.) Every single configuration has a label.

c. EGAN will identify the difference between label A and label B at a given moment, recognizing the difference and repeating this same process several times to see the changes that will be finally translated into a trend.
d. Once the trend is identified, it can be checked and double-checked permanently by a recurring examination of its consistency.
e. Once the velocity of the trend is determined, it could be a basis for suggesting actions based on the time scope of those who want to intervene.

How can everything be produced?

One of the ways to explore it is to go into a deep level of structure where the combination of interrelations is such that some changes would be potentially

feasible to obtain a configuration identical to the one of the phenomena we want to reproduce.

The hypothesis that *Infinitylogy* should be able to verify is that *there would be somewhere in the deeper level of the structure of element A, some identical—or able to be made identical—segment(s) with the targeted element B*.

Once we find it, we can use it as one part of the causal chain and keep changing it until we transform that configuration into the one that creates the desired thing.

Thus, we can see that the levels of structure are, in fact, like the pieces of the creating causal chain for a given phenomenon. Each configuration, once shaped, shapes the following configuration that, once shaped, shapes ...

Our intervention at any arrangement could change the effect-configuration while affecting, to some extent, the cause-configuration.

To be able to realize this kind of intervention, we need:

1. *A philosophical view* on this process
2. A *scientific description* of the process
3. *Software and tools* to calculate and identify each specific configuration, including:
    a. Identification
    b. Coding
    c. Distinction
    d. Description
    e. Exploration
4. Project of the intervention
    a. Which elements?
    b. When?
    c. Where?
    d. How?
    e. Control and verification
5. Having tools and technology to make it practically realized.

At the first level of *Infinitylogy*, for a *philosophical approach* to matter, we take into consideration all these interrelated connections in permanent action, but for the second level, the *scientific approach* takes into account only one or a few of these huge numbers of interconnections. Finally, in the third level, the *technological endeavor* tries to focus only on one or some targeted members of the selected segments of the unlimited causal chain.

The first level is there to help us keep in mind that there are no limits for what we want to know and to do; the second level is to target where we would have advantage to operate; and the third level is for working concretely and precisely where it's effective and efficient to perform.

As soon as a technical intervention fails, the *technological* setting of operations sends its feedback to the *scientific* team of the project to find another potential theoretical direction to explore; if the science cannot find it, it refers to the *philosophical* framework to remind and prompt us that *the number*

of possibilities to go through in each case is immense and unlimited.

By his back and forth process, these three fields of Philosophy, Science and Technology find the solution of operation for every case and complete and enrich each other further in an endless path of exploring the *infinitude* of matter across the universe.

**

Conclusions

What we have said in this book is just a few general ideas and insights regarding *Infinitylogy* as an interdisciplinary field of study in the service of the philosophical theory of *Infinitism*.

This latter says that total abundance and the end of scarcity in human history are as feasible as any other project; it is a *megaproject*, of course. We need only to combine our endless creativity with the infinitude of the universe and we get whatever we want and as much as we want.

Infinitism suggests that any end or limitation is our mind's imagination and does not have anything with the reality of the infinite material world. We mistakenly initiated our history on a false, imaginary belief that created all the miseries we have been going through for centuries.

We could put an end to this artificially fabricated desolation by changing our worldview. *Infinitism* is

here to suggest that this existential revolution for mankind is feasible, and we could use *Infinitylogy* to show that a methodical and systematic cooperation between philosophy, science and technology could assure the likelihood of this realistic utopia.

While I'm not sure about any of the technical declarations proposed in this book, I nevertheless presented all of them on only one certitude that justifies the whole project in this book:

Everything is infinite or is not.

If so, the material possibilities of the universe could also be infinite. Couldn't they?

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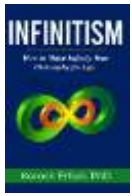
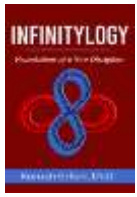
Books published so far:



Infinitism: How to make Infinity your philosophy for life, ILCP Publishing House, 2021, 375 pages.



Infinitylogy: Foundations of a New Discipline, ILCP Publishing House, 2021, 148 pages.

Basis of Infinitylogy: How and why to study Infinity, ILCP Publishing House, 2021, 148 pages.

Infinitude in Action: Exploration and Utilization of Infinity**,** ILCP Publishing House, 2021, 200 pages.

Project of Infinitism: How to Transform your Ideas into Projects**,** ILCP Publishing House, 2021, 132 pages.

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