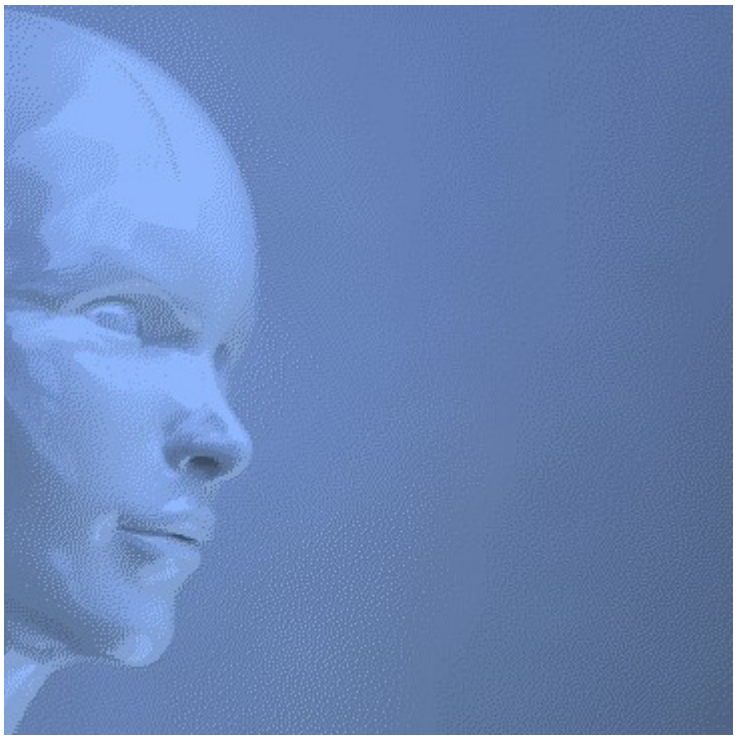
The Logic of Language

Automated reasoning based on the Laws of Intelligence naturally embedded in the Human Language



Whoever studies nature — studies God's creation.

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Introduction

Science is concerned with natural phenomena that can be observed, replicated, tested, and potentially falsified. Belief, by contrast, deals with phenomena that are unobserved, untestable, non-replicable, or unfalsifiable.

The origins of the laws of nature, energy, matter, the universe, life, taxonomic families, natural intelligence, consciousness, and the human language have never been directly observed — let alone replicated, tested, or falsified. Consequently, any explanation about these origins is not a scientific conclusion but part of a belief system — unless and until the phenomena themselves can be reproduced under controlled conditions and on an appropriate scale, if necessary.

Without such replication, these models remain outside the domain of verifiable science.

Some historical events cannot be replicated, while others can. It is braver to acknowledge that we cannot replicate the origin of the laws of nature, energy, matter, the universe, life, taxonomic families, natural intelligence, consciousness, and human language than to invent hypothetical models that also cannot do so, while imposing this fabricated belief system—namely philosophical naturalism—on society, including vulnerable youth.

Unlike other origins, the unrevealed properties of intelligence and language may be accessible to replication under controlled conditions, by examining the underlying laws of nature.

This document explores how natural intelligence and the human language can be replicated in software by identifying and applying the Laws of Intelligence naturally embedded in the Human Language.

1. Fundamental science

This document proposes a fundamental—scientific—approach towards a profound understanding of natural intelligence and natural language based on the laws of nature.

1.1. Fundamental truth

There is only one truth in fundamental science: **the way nature works**.

Nature operates in a single, definite order, governed by natural laws. Those who investigate these laws and uncover how nature truly works will find their discoveries confirmed under controlled conditions — and, in time, applied to everyday life. In this way, taxpayers will have a Return on Investment in their funding of science.

1.2. Fundamental sciences are closing the circle

We perceive nothing other than natural phenomena obeying the laws of nature, and proceeding according to the laws of nature. And we perceive nothing other than natural phenomena closing the circle, as illustrated by the following example of electromagnetism.

The field of electromagnetism is a fundamental science because it closes the circle:

- We can convert light to electricity, and we can convert electricity back to light;
- We can convert motion—via magnetism—to electricity, and convert electricity—via magnetism—back to motion.

1.2.1. Cognitive science

The field of Artificial Intelligence (AI) and Natural Language Processing (NLP)—in a broad sense—is mainly studied from the perspective of behavioral/cognitive science, resulting in mimicry of behavior. However, mimicking the behavior of a hen (chicken) does not produce eggs. AI is therefore not naturally intelligent, but the result of human ingenuity.

AI may deliver useful engineered techniques. But humans are the only intelligent actor in AI.

1.2.1.1. AI / NLP is unable to close the circle

As a consequence of being investigated from the perspective of cognitive science, the field of AI / NLP is unable to close the circle on natural intelligence and natural language:

- From readable sentences,
- through natural logic (natural intelligence),
- with the result expressed in readable — word-by-word constructed — sentences again.

Illustrated by an example:

In primary school we all learned a similar sum, given:

- "John has 3 apples."
- "Peter has 4 apples."

The school teacher then wrote:

- 3 apples + 4 apples = 7 apples

However, the result of the sum — "7 apples" — lacks the reference to "John and Peter". So, the result of this sum is insufficient to construct the following readable sentence:

- "John and Peter have 7 apples together."

Hopefully, mathematicians will come to the rescue, by closing the circle scientifically:

- J = 3
- P = 4
- J + P = 7

Unfortunately, the mathematical result "J + P = 7" lacks the reference to "apples". So, also the result of the algebra is insufficient to automatically construct readable sentence:

- "John and Peter have 7 apples together.

Lacking a generic solution, it would require either human interaction, or an engineered solution— a specific solution to a specific problem. Therefore, AI / NLP is not a science, but a field of engineering.

This is just one example of my scientific challenge. A generic solution to this particular example is described in Block 3.

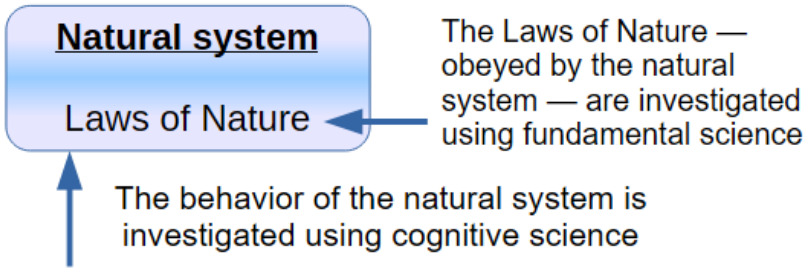
It may seem like Large Language Models (LLMs) can solve reasoning problems. However, LLMs only have a limited, engineered reasoning capability. When reasoning problems are combined, LLMs will start to lose context.

Besides that, AI / NLP is lacking self-organising properties, while our brains do not need help of experts to get their knowledge organised.

1.2.2. Fundamental science investigates Logic and Laws of Nature

Intelligence and language are natural phenomena. To close the circle on natural intelligence and natural language, we need to investigate these natural phenomena from the perspective of fundamental science—also known as Basic Research—which investigates Logic and Laws of Nature.

To illustrate the difference with cognitive science:



1.3. Pitfalls

I noticed a few cases of misunderstanding, which will be addressed in the following paragraphs.

1.3.1. Self-organisation (misunderstood)

Self-organisation is often misunderstood. The following 'scientific' paper states:

> "Self-organisation refers to a broad range of pattern-formation processes in both physical and biological systems".

However, in this paper, no distinction is made between a **static** 'organisation'—which is limited to pattern formation—and a **dynamic** organisation, which requires Natural intelligence.

Distinction:

- **Natural pattern formation**—such as fractals and the formation of snowflakes—is a static process, based on rules (fractals) or the laws of nature (formation of snowflakes);
- **Swarming of birds** is a dynamic, temporary process, based on the bird's instinct. Instinct is an innate mechanism of survival. In case of no danger, swarming is practiced as an emergency drill, while it improves bonding;
- **Self-organisation** is a dynamic, continuous process. It is a result of natural intelligence;
- Any other **organisation**—such as a company or a pack of wolves—is a dynamic, continuous process of multiple intelligent actors.

So, (self-)organisation is a result of natural intelligence rather than being the origin.

1.3.2. Consciousness, neurons, learning, complexity, and intelligence

Consciousness
To many scientists, natural intelligence may be synonymous with consciousness (and free will). Yet systems based on Controlled Natural Language can perform logical reasoning without possessing consciousness.

Neurons
Similarly, many scientists consider neurons essential to natural intelligence. However, Controlled Natural Language reasoners demonstrate that logical reasoning is possible without Artificial neural networks. This suggests that neurons are not essential to intelligence—just as feathers and flapping wings are not essential to flight.

Learning
Learning requires natural intelligence. Yet scientists still do not fully understand what natural intelligence actually is. By that logic, what we call "Machine Learning" is unable to learn.

Artificial neural networks (ANNs) reflect a simple piece of advice my father once gave: "Don't become a monkey trained to perform a trick". In this sense, ANNs resemble a trained monkey—capable of performing, but not of understanding. Moreover, their capabilities are largely confined to pattern recognition and pattern generation.

Complexity
Influenced by philosophical naturalism, some believe that emergent properties will arise from complexity. Pattern recognition and pattern generation may indeed benefit from vast amounts of data. But Natural intelligence involves the application of inherently embedded logic. This natural logic will not emerge from data by complexity.

Moreover, great thinkers like Albert Einstein have emphasized that:

- True intelligence seeks clarity, not complexity;
- Intelligence is not expressed in complexity, but in the ability to distill things to their essence;
- Simplicity is the highest form of sophistication, and that complexity is often a sign of incomplete understanding.

Intelligence
If Large Language Models (LLMs) exhibit any form of intelligence, it did not arise from the complexity of their neural architectures, but from the inherent logic embedded in the human-written texts on which they are trained.

Some scientists, however, attribute the capabilities of LLMs to emergent properties arising from neural complexity, rather than to the logical structures present in human language. Consequently, they face challenges in developing systems like mine—systems grounded in the Laws of Intelligence naturally embedded in the Human Language.

1.3.3. Overwhelming evidence… (Santa Claus)

Some people claim there is "overwhelming evidence" for (any variant of) the Evolutionary hypothesis of Common Descent. However, by being selective—by ignoring disconfirming facts—one can also claim there is "overwhelming evidence" for Santa Claus too:

- Advertisements will forecast the coming of Santa;
- Then he appears everywhere at once, confirming the predictive power of advertisements;
- So, one can meet him in person;
- If one posts/mails/texts/apps a message, one will get a response;
- His address is known: North Pole 1;
- Presents are given;
- and some presents were on wish lists, confirming the predictive power of wish lists.

But we all know: Santa Claus is just a make-believe. In the same way, the "overwhelming evidence" for (any variant of) the Evolutionary hypothesis of Common Descent is just selective—ignoring disconfirming facts—and is therefore unscientific.

Make-believe

A make-believe begins by ignoring disconfirming facts. In philosophical naturalism, disconfirming facts are often labeled—like dark matter and dark energy—then set aside as "placeholders" and reframed as "active areas of research." In this way, a faltering philosophical naturalism is kept alive.

Religion

And a religion takes shape when such make-believe is actively promoted. Believers of philosophical naturalism are spreading their ideas throughout society, including among vulnerable youth.

1.3.4. Boundaries of evolution

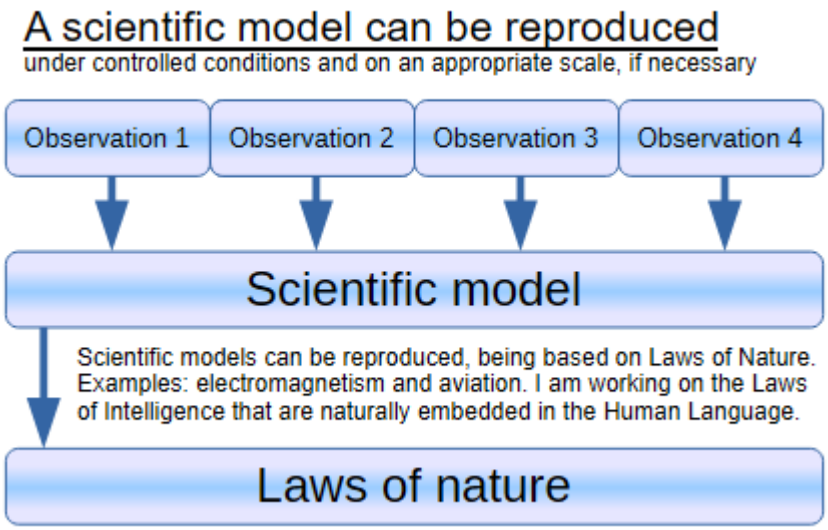
We perceive nothing other than boundaries of evolution — as taxonomic families:

- Viruses only produce viruses;
- Bacteria only produce bacteria;
- Fungi only produce fungi;
- Plants only produce plants;
- Insects only produce insects;
- Fish only produce fish;
- Birds only produce birds;
- Monkeys only produce monkeys;
- And humans sometimes produce pigs.

It seems this distinction of taxonomic families is not even clearly labeled. What was once called macroevolution has had its definition broadened or altered over time.

1.3.5. Disconnected from reality

Science is concerned with natural phenomena that can be observed, replicated, tested, and potentially falsified.



Regarding the origins of the laws of nature, energy, matter, the universe, life, taxonomic families [1], natural intelligence, consciousness, and the human language, belief in God's creation implies the following:

- God created the laws of nature, as well as energy, matter, the universe, life, taxonomic families, natural intelligence, consciousness, and the human language;
- Humans are subject to these laws of nature;
- Therefore, humans—including believers of philosophical naturalism—are unable to create new laws of nature, energy, matter, a new universe, life, new taxonomic families, full natural intelligence [2], consciousness, and the human language; nor can they alter the laws of nature, including time.

Stating such limitations is scientifically valid.

However, rather than acknowledging these limitations, believers of philosophical naturalism have created models outside the domain of verifiable science:

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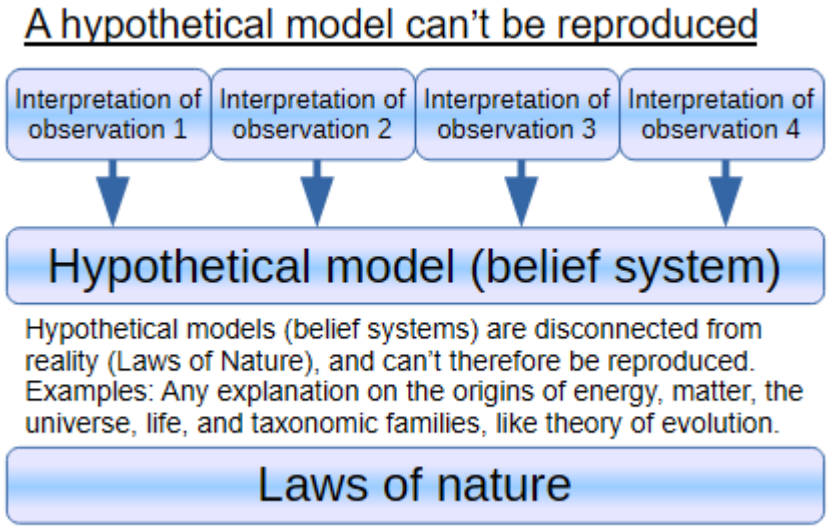
1 In Genesis 2 of the Bible, God gave Adam the privilege of naming all kinds of animals.

2 Christians can explore—and to some extent replicate—the natural logic of human language, provided they sincerely seek understanding from the living God on this subject.

Fossils—and similar discoveries—are findings. However, findings are not necessarily proof, as their origin and significance can be interpreted in different ways. Believers of philosophical naturalism interpret such findings in ways that align with their underlying hypotheses, which can lead their models to become disconnected from reality and no longer falsifiable. When hypotheses are not falsifiable, they fall outside the domain of verifiable science.



1.3.6. Historical science

With their models fallen outside the domain of verifiable science, believers of philosophical naturalism fall back on the term "historical science". Yet Wikipedia offers no clear definition of this concept, aside from standard historical research on relatively recent history.

Moreover, historical research can be abused as an instrument of propaganda, with facts selectively presented or interpreted. If one seeks to promote the idea that God played no role in the origin of the laws of nature, energy, matter, the universe, life, taxonomic families, natural intelligence, consciousness, and human language, this may lead to the development of theories such as the Big Bang, primordial soup, and Evolutionary hypothesis of Common Descent.

If you cannot replicate the origin of the laws of nature, energy, and matter, then you don't even need to think about how more complex structures would have emerged through natural processes, such as the universe, life, taxonomic families, and natural intelligence. Then you're simply fantasizing at the taxpayer's expense.

This fantasy world of philosophical naturalism shows signs of a belief system—perhaps even a religion: vulnerable youth are legally indoctrinated with this fantasy.

Even in fairy tales, nothing happens without a cause—every action has a reaction, as in "Open Sesame!". Nothing can—or ever will—occur on its own, unless a god is involved, either known as God or nicknamed as "natural processes".

1.3.7. Limitations of philosophical naturalism

Philosophical naturalism is primarily geared toward providing *ex post* explanations—explaining phenomena after the fact—rather than discovering or actively harnessing them. As a result, philosophical naturalism is not useful when it comes to discovering—let alone replicating—the phenomena it seeks to explain.

For example, no variant of the Evolutionary hypothesis of Common Descent was required for the invention of the airplane. Aircraft do not depend on the evolution of feathers or flapping wings; rather, they operate according to the physical laws that govern flight.

In the same way, no variant of the Evolutionary hypothesis of Common Descent is useful for understanding the foundations of Natural intelligence, because natural intelligence can only be understood as grounded in the laws of nature themselves—as a system of logical rules governing natural processes—a view more closely aligned with the belief that nature is created by God.

So, it seems that philosophical naturalism neither describes nor explains how nature actually works. Rather, it appears to be a purely philosophical framework, disconnected from reality.

1.3.8. Clash of belief systems

Influenced by philosophical naturalism, some would argue that all the logic [3] within my system is fully programmed, and therefore exhibits no emergent properties — and consequently does not constitute natural intelligence.

My response would be that non-replicable emergent properties are unscientific. Moreover, I hold that nature itself is intelligently designed. Thus, if one aims to replicate Natural intelligence, one must also replicate the intelligent design underlying it.

Any belief system that successfully replicates a natural phenomenon—once beyond understanding—likely provides a more accurate explanation of how nature actually functions.

3 My system has no prior knowledge. Any knowledge entered, is processed according to the programmed natural logic.

1.3.9. How philosophical naturalism is useful

Philosophical naturalism tests the belief in creation by God to its very core:

- If the laws of nature, energy, or matter can arise from nothing through natural processes,
- or if the laws of nature—including time—can be altered [4],
- or if life can be created from non-living matter [5],
- or if life is definitively found on other planets [6],
- or if a genuinely new life form—a new taxonomic family—can be evolved in a laboratory,
- or if my automated CNL reasoner is surpassed by emergent properties,

then the belief in creation by God might not be an accurate explanation of how nature actually functions. For the time being, however, creation by God remains, the most thoroughly tested belief system—ironically, thanks to philosophical naturalism.

1.3.10. Largest thought experiment ever conducted—yet it failed

Philosophical naturalism is the largest thought experiment ever undertaken: the attempt to exclude God from the equation by assuming that everything that exists can be explained as arising solely from natural processes. Yet it appears to rest on a false premise.

For example, if everything arose from natural processes, how did the underlying laws of nature themselves arise? Some, including Stephen Hawking, have tried to sidestep this question by suggesting that the laws of nature need not be explained within science itself—leaving open the possibility that the laws of nature were created by God, which undermines the original aim of philosophical naturalism.

And some argue that energy arose from quantum fluctuations. However, quantum fluctuations themselves presuppose energy, which leads to circular reasoning.

So the question of whether God was required to create everything that exists remains unresolved; as a result, it is still a matter of belief rather than a settled conclusion.

Or, as I would put it: Starting from a false premise will not bring you closer to the truth.

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4 God created the laws of nature. Humans are subject to these laws, which rules out time travel.

5 If life cannot arise from non-living matter, it rules out alien life on other planets

6 God has not created life on other planets. A simple deduction: God's love for His creation is so great that—even when humanity committed high treason against Him—He chose to provide redemption through Jesus as a rescue plan, rather than starting a new project on another planet.

1.3.11. Is Christianity anti-science?

Some people believe that Christianity is anti-science, or anti-scientific. However, for centuries, Christian scientists were leading in fundamental science. They sincerely observed the way nature —as created by God—works. As a result, their findings could be reproduced under controlled conditions, after which their findings could be applied to daily life:

- in microbiology, Antonie van Leeuwenhoek,
- in chemistry, Robert Boyle and Antoine Lavoisier,
- in physics, Isaac Newton, James Prescott Joule, and Arthur Compton,
- in electromagnetism, Alessandro Volta, Michael Faraday, and James Clerk Maxwell,
- in mathematics, Gottfried Leibniz, Leonhard Euler, Bernhard Riemann, Blaise Pascal, and Kurt Gödel,
- in health care, Joseph Lister — who is called the "father of modern surgery",
- in genetics, Ronald Fisher and Gregor Mendel — who is called the "father of modern genetics",
- Charles Babbage — who is called the "father of the computer",
- George Boole — who is called the "father of the digital age" or the "father of binary logic",
- Galileo Galilei — who is called the "father of observational astronomy, modern-era classical physics, the scientific method, and modern science",
- and Johannes Kepler — who is called "one of the founders and fathers of modern astronomy, the scientific method, natural and modern science".

By replicating and applying their findings, these Christian scientists provided a Return on Investment to taxpayers, which we still benefit from today. Their approach of using fundamental science might be useful to investigate natural intelligence and natural language too.

1.3.12. Fundamental choice: apes or Adam and Eve?

Any variant of the Evolutionary hypothesis of Common Descent is fundamentally at odds with Christian beliefs. So, only one of both belief systems can be true:

- If man shares a common ancestor with the ape, Adam and Eve never existed;
- If Adam and Eve never existed, the Fall of man—high treason against God—never happened;
- If the Fall of man never happened, the redemption through Jesus is meaningless;
- If redemption through Jesus is meaningless, Christianity is nothing but an empty religion.

So everyone has to make a choice: a common ancestor with the ape, or creation by God.

2. The fundamental approach of Thinknowlogy

We perceive nothing other than an ordered universe that is subject to unified, exact, structured, deterministic [7], and consistent the laws of nature, because we perceive nothing other than natural phenomena obeying the laws of nature, and proceeding according to the laws of nature [8].

As such, I presume that natural intelligence is enshrined in the natural laws too, and proceeds according to those laws of nature. So, if one wants to reproduce Natural intelligence—under controlled conditions, and at scale—one has to investigate those Laws of Intelligence.

Being deterministic (=implementable), these Laws of Intelligence might be implementable in artificial systems — through a process of reverse-engineering.

7 deterministic: "the doctrine that all facts and events exemplify natural laws"

8 I presume that God has created the Laws of Nature to make his creation run like clockwork in a unified, exact, structured, deterministic, and consistent way

2.1. Sources of natural intelligence

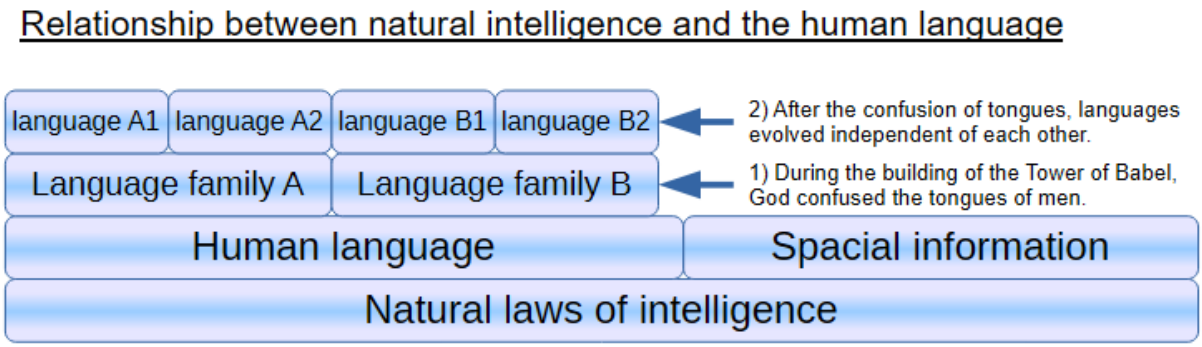
I have identified the human language and spacial information as sources of Natural intelligence, which means that these sources of intelligence provide concrete logic to our brains, by which our brains can organise their knowledge and spatial information:

- Natural language is providing concrete logic for organising knowledge objects;
- Spatial information is providing concrete logic for organising spatial objects (used in, e.g., self-driving cars).

I focus on the human language.

Because all natural phenomena are designed in a unified way, natural intelligence and the human language might be related. If so, it must be possible to identify the natural laws obeyed by language. After identification, it must be possible to reverse-engineer the way nature works regarding knowledge. In other words: how the human brain is organising its knowledge.

According to the biblical worldview, life and the universe were all designed once, while no improvements were made afterward. So—if intelligence and language are related—current languages must still obey the same laws of intelligence as were designed in the beginning, regardless of all their differences [9]. Then, current languages still must share the same foundation.



9 The existence of entirely different languages today is explained in the bible: "At one time all the people of the world spoke the same language and used the same words" (Genesis 11:1). During the building of the tower of Babel, God confused the tongues: "Come, let's go down and confuse the people with different languages. Then they won't be able to understand each other" (Genesis 11:7).

2.2. Natural intelligence

To contribute to science, intelligence needs to be defined in a unifying, fundamental (=natural), and deterministic [10] (=implementable) way:

Natural intelligence is the use of naturally embedded logic.

One's goal in using natural intelligence, is to independently:

- Avoid chaos,
- Create order,
- Restore order.

Natural intelligence provides self-organising properties, by one can independently:

- Group what belongs together;
- Separate what doesn't belong together;
- Archive what is no longer relevant;
- Plan future actions;
- Foresee the consequences that the planned actions will have;
- Learn from mistakes.

More into detail:

- Grouping (combining) of individual or separate objects, to achieve a goal that can not be achieved by either of those objects separately;
- Separating (differentiating) compound or intertwined objects, to clarify the situation, by putting them in their context;
- Archiving of obsolete information, separating current from obsolete information;
- Planning future actions, setting goals, and anticipation of changes;
- Foreseeing possible consequences: Using knowledge and experience to predict possible consequences of planned actions (own plans and planned actions of others);
- Learning from mistakes: Using knowledge and experience to determine the course of a mistake, and to avoid making this kind of mistake in the future.

These capabilities of intelligence can be applied to basic concepts like knowledge objects and spatial objects. Grouping of, for example, numbers, we call: adding. Separating of numbers, we call: subtracting.

10 deterministic: "the doctrine that all facts and events exemplify natural laws"

Deepening:
- Creation starts with grouping;
- Understanding starts with separating;
- Omitting starts with archiving;
- Governing starts with planning;
- Anticipation starts with foreseeing;
- Improvement starts with learning from mistakes.

2.2.1. Natural language as an intelligent system

Assuming that natural language is an intelligent system, predictions can be made about the intelligence that will be found in language:
1. Natural language will have self-organising properties;
2. The sender's brain will add logical clues to the knowledge that is expressed;
3. The receiver's brain will use the logical clues added to the knowledge, enabling it to organise the received knowledge.

In all languages, there will be specific words and sentence constructions for:
- Grouping knowledge that belongs together;
- Separating knowledge that doesn't belong together;
- Archiving knowledge that is no longer relevant;
- Planning future actions;
- Foreseeing the consequences that the planned actions will have;
- Learning from mistakes.

2.2.2. Self-organisation as a property of natural intelligence

Self-organisation is a property that separates natural intelligence from Artificial Intelligence. Take for example Large Language Models: They are unable to seamlessly integrate new knowledge with existing knowledge, after being trained. That would require human intervention as well as engineered techniques.

Self-organisation is a property of natural intelligence — rather than the origin:
- Natural intelligence is the use of naturally embedded logic;
- Logic is essential for applying set theory;
- Set theory is fundamental to every form of organisation—grouping what belongs together, separating what does not, and so on;
- Prefix "self" of self-organisation means in this case: done automatically.

Now the other way around:

- Self-organisation requires set theory to be automated;
- Set theory requires logic to be implemented;
- This logic needs to be natural in order to be automated;
- Natural logic requires a natural source of intelligence;
- The human language and spacial information are natural sources of intelligence;
- Their inherent logic can only be uncovered by unravelling their underlying design;
- Applying this inherent, natural logic enables self-organisation.

So, the purposiveness (teleology) of human language can be used to replicate its inherent, natural logic — including self-organisation — whereas scientists tend to avoid researching purposiveness (teleology) in nature, instead referring to it as "apparent purposiveness" (teleonomy).

Whoever studies nature — studies God's creation. Perhaps that's why scientists in certain fields are reluctant to study how nature truly works.

2.2.3. Natural reasoning in natural language

Almost 2,400 years ago, Aristotle already described a few cases of natural reasoning in natural language — combining natural logic (natural intelligence) with natural language, like:

- Given: "All philosophers are mortal."
- Given: "Socrates is a philosopher."
- Logical conclusion: "Socrates is mortal."

This case of natural reasoning in natural language will be the start of our investigation of finding, unraveling, and replicating God's intelligent design regarding to natural intelligence and natural language.

2.3. Laws of Intelligence naturally embedded in the Human Language

Clues of logic—naturally embedded in the human language—provide information to our brain on how to organise the gained knowledge. The clues of logic include specific words for grouping, separating, and archiving (see definition of Natural intelligence). By using these logical clues—which I call the Laws of Intelligence naturally embedded in the Human Language—we can implement a naturally intelligent, self-organising knowledge technology similar to the way the language centre of our brain works:

- The basic verb "is/are" defines present tense basic logic, which has been described scientifically;
- An indefinite article (in English: "a") defines a structure, which has been described scientifically;
- Conjunction "and" has the intelligent function in language to group knowledge, with and without relations (Block 3 and Block 4 of my Scientific challenge);
- Conjunction "or" has the intelligent (Exclusive OR) function in language to separate knowledge (Block 6);
- A definite article (in English: "the") has the intelligent function in language to archive knowledge (Block 7);
- The basic verb "was/were" defines past tense basic logic (Block 5);
- The possessive verb "has/have" defines present tense direct and indirect possessive logic (Block 1 and Block 2);
- The possessive verb "had" defines past tense—direct and indirect—possessive logic (Block 1 and Block 2, and Block 5).

I am implementing grouping, separating, and archiving as much as possible while leaving the implementation of the remaining capabilities to future generations. These Laws of Intelligence naturally embedded in the Human Language drive a set of structuring algorithms [11] in my system to independently group, separate, and archive knowledge in its knowledge base.

So, natural language provides knowledge—expressed in a certain language—as well as a logical structure of how that knowledge should be organised. This logical structure is (almost) language-independent.

11 algorithm: "any set of detailed instructions which results in a predictable end-state from a known beginning"

2.3.1. Example of reasoning: Autonomous generation of questions

Let's put the Laws of Intelligence to work. Or at least, one law:

- Given: "Every person is a man **or** a woman."
- Given: "Addison is a person."
- Automatically generated question: "Is Addison a man **or** a woman?"

How to automatically generate the question mentioned above, using Laws of Intelligence:

- A law of intelligence: Conjunction "or" has the intelligent (Exclusive OR) function in language to separate knowledge;
- Given "Every person is a man **or** a woman" and "Addison is a person";
- Substitution of both sentences: "Addison is a man **or** a woman";
- Conversion to a question: "Is Addison a man **or** a woman?".

2.3.2. The function of lexical categories

Nouns, verbs, adjectives, adverbs, pronouns, prepositions, conjunctions, interjections, numerals, articles, and determiners are word classes / Parts of Speech (PoS) / lexical categories.

Lexical categories are essential for reasoning. Consider, for example: "All philosophers are mortal" and "All blue are mortal". Only one of both sentences is grammatically correct, while the other doesn't make sense. So, knowledge technology must always keep track of the lexical category of each word.

Each word of a list of words is usually of the same lexical category. Consider, for example: "Red, white, and blue" and "Red, a sister, and four". Again, only one of both phrases is grammatically correct, while the other doesn't make sense.

2.3.3. Autonomy / independently

In the definition of natural intelligence, the word "independently" is used. So, we need to define that word, which is similar to the word "autonomy":

An autonomous system relies on the **consistency** of a natural source, or a **consistent** artificial source, like GPS (Global Positioning System). So, an autonomously intelligent system relies on the consistency of a natural source of intelligence.

AI does not rely on the consistency of a natural source of intelligence. Instead, a lot of human labor is required—such as the fine-tuning of LLMs—and **inconsistent** artificial sources or engineered techniques are used in the background, like, for example, some reasoning or semantic techniques.

2.3.4. Universal Grammar theory

In his Universal Grammar theory, Noam Chomsky proposes that the ability to learn a language is hard-wired in the brain, which differs from my fundamental approach:

There is no Universal Grammar, but there are Universal Laws of Intelligence naturally embedded in the Human Language, while logic / algebra / universal reasoning rules on themselves are (almost) language-independent.

When children learn a language, this universal logic in the language center of their brain is 'configured' for a language, which will be their native language / mother tongue. My Controlled Natural Language reasoner works similarly: It implements an (almost) language-independent logic, which is configured for five languages: English, Spanish, French, Dutch, and Chinese.

2.3.5. Free will and morality

First of all, morality and free will originate from the bible.

According to the bible, humans separate from animals by having a spirit, which provides humans a free will and a set of morals. Spirits — being supernatural — are, by definition, not bound by the laws of nature. Therefore, spirits can't be captured in machines, which are, by definition, bound by the laws of nature. So, a machine will never have a spirit, free will, and an autonomously controlled set of morals like humans have.

I agree with John Searle on his Chinese room thought experiment, that computers will never have a mind and consciousness:

> "if there is a computer program that allows a computer to carry on an intelligent conversation in a written language, the computer executing the program would not understand the conversation either".

Actually, the Laws of Intelligence only apply to natural intelligence, not to consciousness, morality, or a fee will.

Testimony: I don't have this wisdom of myself

During my young childhood, God asked me if I wanted to become rich or wise. I chose wisdom [12] because I like the stories about the wisdom of King Solomon.

A few years later, I offered my life to God, as I gave up my own life and desires, and fully dedicated my life to Him. Initially, nothing special happened. I studied electrical engineering, electronics, and computer science (Bachelor, specialisation: telematics). I also tried a master study, which I didn't finish.

During my study computer science, I joined elective course Artificial Intelligence. However, after a few lessons I left the course disappointed, because LISP and Prolog are no replications of natural intelligence. On May 15, 1990, I attended a seminar on Artificial Neural Networks at TU Delft. However, after a few years, I realised that artificial neural networks do not possess the capabilities of natural intelligence either.

I became just another Software Tester. I am skilled in software testing, but I recognise my limitations. I am not a genius.

In the first decade of this century, God asked me if I would accept an assignment—a mission of life—to prove (philosophical) naturalism / evolutionism wrong. If I would accept this assignment, God would provide unique knowledge about His creation of intelligence and language. I accepted. And as promised, God gives me wisdom—insights beyond my knowledge and intelligence—as long as I work on this project. However, if I use the given wisdom for my own good, it will be taken from me. I was explicitly ordered: "Give everything away. Keep nothing behind".

While I was criticising the current approach to AI and NLP on LinkedIn for not having a (natural) foundation, nor a (natural) definition of intelligence, someone asked me what definition I used. Then I had to admit to myself that I didn't have a definition of intelligence either. So, I prayed and asked for an answer. Ten minutes later, I was able to write down a unifying, fundamental (=natural) and deterministic (=implementable) definition of intelligence, provided by God. Later I also discovered how this definition is related to language through Laws of Intelligence naturally embedded in the Human Language.

12 It wasn't a trick question, because trick questions are not consistent with the character of God. If I had chosen wealth, I had to give this wealth away like I give away the results of my wisdom now. But I guess, God already knew what my answer would be. When God gives such a gift, it doesn't mean you can keep that gift for yourself. It means, you should use it to the glory of God.

Appendix: Genesis hidden in the Chinese language

The Chinese language is the oldest, continuously written language in the world. It was first written over 4,500 years ago. And some Chinese characters seem to refer to first book of the bible (Genesis). A few examples:

The Chinese character for "to create" consists of four components, and seems to refer to the creation of "Man" – later called: Adam:

- Dust or mud: God has created Adam from dust;
- Mouth or breath: God breathed into the nostrils of Adam;
- Movement or life: Adam became alive;
- Able to walk: Adam was directly able to walk (and to speak).

"*Then the LORD God formed the man from the dust of the ground. He breathed the breath of life into the man's nostrils, and the man became a living person.*" (Genesis 2 verse 7)

(See on YouTube: "Genesis hidden in the Chinese language? Part 2")

The Chinese character for "to covet, to desire" consists of two components, and seems to refer to the Fall:

- Two trees: the tree of life, and the tree of the knowledge of good and evil;
- A woman: "Woman" – later called: Eve – desired the fruit of the only forbidden tree.

(See on YouTube: "Genesis hidden in the Chinese language? Part 3")

On YouTube: "Genesis Code Hidden Within The Ancient Chinese Language", among all:

- The Chinese character for "first" consists of three components: alive, dust, and man. (Adam – created from dust – was the first man to become alive);
- The Chinese character for "to talk" consists of three components: dust, breath/mouth, and alive. (Adam – created from dust – was able to talk);
- The Chinese character for "naked" consists of two components: man and fruit. (After Adam and Eve had eaten the fruit from the forbidden tree, they felt naked);
- The Chinese character for "pain" consists of two components: a piece and two trees. (Pain was a punishment from God for Adam and Eve after they had eaten a piece of fruit from the forbidden tree).

On YouTube: "How Chinese Characters confirm Genesis & Bible stories", among all:

- The Chinese character for "flood" consists of four components: eight, united, earth, and water. (Noah, his wife, and their three sons with their wives, all eight were united in their boat, while the surface of the Earth was flooded with water).