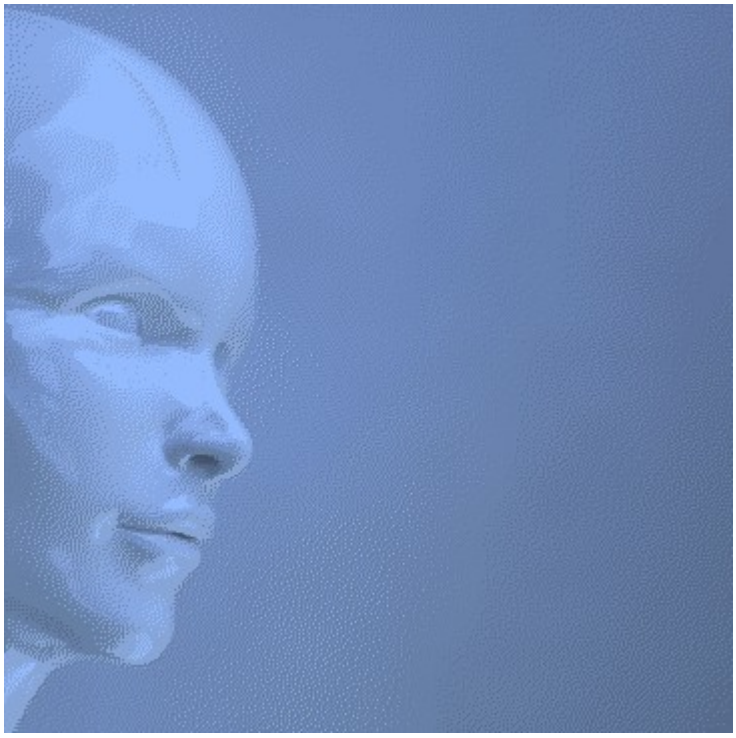
AI and NLP – a fundamental approach

(the downfall of the evolution theory as the assumed origin of intelligence and language)



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Introduction

Around the year 1956, the field of Artificial Intelligence (AI) and knowledge technology was started. However, there are four reasons to believe that the current approach to AI and knowledge technology has a fundamental problem:

1. Intelligence and language are natural phenomena. Natural phenomena obey laws of nature. And laws of nature are investigated using basic or fundamental science, while the field AI and knowledge technology is being developed using behavioral or cognitive science, which researches behavior.

   When the results using cognitive science are implemented in machines, it delivers a simulation of behavior – focused on user experience – while fundamental science delivers an artificial implementation of natural laws. To illustrate: The current approach to AI and knowledge technology delivers a flight simulator – user experience – rather than an airplane. A flight simulator doesn't leave the room, while an airplane obeys the laws of physics in regard to the essence of aviation (lift, weight, thrust and drag);
2. In addition, the field of AI and knowledge technology still has no fundamental (=natural) and deterministic (=implementable) definition, 60 years after its start, by which this field has no foundation in nature;
3. A science integrates its disciplines. However, the field of AI and knowledge technology fails to integrate (automated) reasoning and natural language. In other words, this field has a blind spot:
   - Reasoners (like Prolog) are able to reason, but their results – derived knowledge – can't be expressed in readable and automatically constructed sentences;
   - Chatbots and Virtual (Personal) Assistants may well produce understandable sentences, but they are unable to reason logically. Even more, they are only able to select a human-written sentence in which they fill-in a user-written keyword;
   - Controlled Natural Language (CNL) systems are very limited in integrating both disciplines;
4. I am applying the scientific method, while researching the way nature works in regard to intelligence and meaning. The techniques I am developing have – in my opinion – a a higher degree of integration of both disciplines than the techniques taught by science.

What if this field should be researched using fundamental science? What if intelligence can be defined by laws of nature? What if language appears to obey natural laws of intelligence?

If so, wouldn't a fundamental approach – based on laws of nature and researched using fundamental science – speedup progress in the field of AI and knowledge technology?

1. The current state of AI and knowledge technology

In the years before the first flight of the Wright brothers, aviation wasn't scientific yet, because the attempts were "inspired by nature", using feathers, flapping wings, bird suits, and so on:

- YouTube: "first attempts to fly by man";
- YouTube: "Man's Early Flight Attempts";
- YouTube: "Death Jump - Franz Reichelt jumps off the Eiffel Tower".

However, the Wright brothers understood: A machine will only be able to fly if it is based on nature, based on Laws of Physics.

This situation is illustrative for the current state of AI and knowledge technology:

- This field lacks a natural, unambiguous and deterministic definition of intelligence (for AI) and meaning (for knowledge technology);
- Without natural definition, this field lacks a natural foundation;
- Without foundation, the techniques developed on AI and knowledge technology are in fact baseless. And without common (natural) foundation, its disciplines – like automated reasoning and natural language – can not be fully integrated;
- Being baseless, AI got stuck at a simulation of behavior (not necessarily intelligent behavior), and knowledge technology got stuck at linking of keywords.

More over, even after 60 years, hardly anything fundamental is defined yet in this field (and scientists don't seem to care). So, I have to conclude that this field is not scientific yet, similar to aviation based on feathers and flapping wings.

I own a (printed) copy of the Encyclopædia Britannica, the 1990 edition. The topic Intelligence of the Macropædia starts with praising the founding fathers of the evolution theory for their contribution on this topic, because the evolution theory would finally explain the origin of intelligence. However, the article fails to explain what intelligence actually is…

At least 100,000 man years [1] of scientific research have already been spend in the field of AI and knowledge technology, and scientists still fail to convert a sentence like "*John is the father of Paul.*" in a generic (flexible) way to "*Paul has a father, called John.*".

Both sentences have (almost) the same meaning [2]. So, it must be possible to convert one sentence to the other, and back. However, such a conversion requires to understand what intelligence / meaning is. Lacking a natural definition of intelligence / meaning, no technique on AI and knowledge technology is able to deliver such a conversion in a generic way.

Only a fundamental approach – based on laws of nature – will deliver significant progress.

1 60 years times 1,500 researchers on average
2 *Meaning* is: intelligence applied to knowledge, intelligent function in language.

1.1. "Don't become a monkey that learns a trick"

My father taught me: "*Don't become a monkey that learns a trick*". It illustrates the current state of AI and knowledge technology:

Being unable to define intelligence and meaning in a natural and deterministic way, scientists fail to define and teach the foundation of this field. Instead, a set of (baseless) techniques ("tricks") are developed and taught. The set of techniques on AI is said to implement intelligence in artificial systems, and the set of techniques on knowledge technology is said to implement meaning in information systems.

It is like watching children play, who are building a tower of wooden blocks: "*This tower is going to reach to the clouds*". But as a grownup, I know that the tower will fall-over when it has reached the height of one meter. And if it didn't fall-over yet, that the kid's attention will be lost at that time. In other words: This field is chasing hypes. Without foundation, empty promises are made, which will die a silent death after a while, being replaced by another hype.

In the food industry, the quality of food is guaranteed by the manufacturer by implementing a Code of Hygiene. So, if food falls on the floor, that piece of food doesn't meet the quality standard anymore. The same goes for other industries.

In the field of AI and knowledge technology however, there is no foundation defined that guarantees to implement natural intelligence in artificial systems, and to implement natural meaning in information systems. Let alone that a quality standard is defined to guarantee that the intelligence and meaning are preserved in the system, during each step of the process.

1.2. Starting point depend on the world view of the researcher

Since the origin of life is subject to discussion, the starting point for researching AI and knowledge technology depend on the world view of the researcher on the origin of intelligence and natural language:

- According to the evolution theory, intelligence would have been emerged from nothing, and natural language would have been evolved from the primal sounds of cave men. Evolutionists believe in the principles of randomness, chaos and complexity. A lot of them consider natural language to be chaotic and complex;
- According to the biblical world view, God has created laws of nature to make his creation run like clockwork – in a unified and structured way – including intelligence and natural language, by which is assumed that Adam was directly able to speak after his creation by God, and that Adam was instantly intelligent.

The one with the world view nearest to the way nature works – the one who understands nature the best – will have the best results, in the same way as the Wright brothers were the ones who understood the essence of aviation – the laws of physics – the best.

2. Overview on the current approach

Unable to define natural intelligence / meaning, the field of AI and knowledge technology implements **programmed intelligence**. It is clever engineering rather than natural intelligence / meaning. This video on YouTube separates clever engineering from the Science Fiction stories told on AI: "How Intelligent is Artificial Intelligence?".

In the following paragraphs, an overview on the current approach is listed. But first a brief introduction to the next chapter.

Autonomous systems: Mars rovers, autonomously flying drones and driver-less cars are examples of autonomous systems. They are able to utilize consistent sources to navigate, like radar, cameras and GPS. These sources are consistent with their maps and with their movement: If the vehicle moves, their radar, cameras and GPS will move accordingly. And marks on the map will eventually appear on radar and cameras when it comes near the GPS position of those marks.

Such systems are autonomous – but not autonomously intelligent – because the intelligence in such systems is programmed.

Autonomously intelligent systems: Grammar is a naturally consistent source. It is subject to Natural Laws of Intelligence. For example, each and every (human) language has an equivalent of conjunction "*or*", like in sentence "*A person is a man or a woman*". This word has an intelligent function: It is used by our brain to separate knowledge, in this case to separate the words "*man*" and "*woman*".

By utilizing grammar as a natural source of intelligence, it is possible to implement natural intelligence / meaning in artificial systems, by which these systems become autonomously intelligent (up to a certain level).

2.1. Evolutionary intelligence

First of all, Evolutionary Algorithms (EA) and Genetic Algorithms (GA) are obviously algorithms. Algorithms are designed by definition, and design isn't supported by the evolution theory. So, EA and GA are not supported by the evolution theory. Regarding to the use of random in AI: Such a system obeys the golden rule "*Garbage in, garbage out*".

Evolutionary Algorithms are useful though for finding an optimum value. Some people call it "self-improvement". But they mix-up three terms: Finding an optimum value, micro-evolution and macro-evolution.

Finding an optimum value: A central heating system uses a PID Controller to find the optimum burning time in order to avoid *undershoot* and *overshoot*.

Micro-evolution: In his "On the Origin of species", Charles Darwin proved Natural Selection. It is defined as: "small changes over time within **one species** or isolated population". It is scientifically proven. So, hardly anyone has problems with this phenomenon, which is later called: micro-evolution.

Macro-evolution: At the end of his work, Darwin assumed that Natural Selection might have a *bigger brother* – later called: macro-evolution – which might explain the origin of species without God as the creator of all. This assumption is defined as: "the emergence of new – and increasingly more advanced – functions by random mutations". Note that Darwin didn't prove macro-evolution, and that the title is therefore misleading. Because he didn't prove the origin of species.

Nevertheless, even more than 150 years after publication, this assumed process of macro-evolution has not been replicated yet in artificial systems. So, even from the world view of the evolution theory, this assumed phenomenon will not be able to contribute yet to AI or knowledge technology.

Some believe that micro-evolution will become macro-evolution over time, if you just wait long enough. Let's put the definition to the test: "small changes **over time** within **one species** or isolated population, **over time**". It stays "over time". And it stays "within one species".

To illustrate the lunacy of macro-evolution:

• The Second Law of Thermodynamics for "dummies": Without external influence, water will never run uphill;

• Macro-evolution for "dummies": Without external influence, water will run uphill eventually, if you wait long enough.

Besides that, according to profound evolutionist Richard Dawkins, evolution has no plan and no direction. So, if it would be possible to implement macro-evolution in artificial systems, how can we be sure it will evolve in the same direction as assumed by the evolution theory, able to understand our language and connecting to our intelligence?

So, the evolution theory will not contribute to AI, nor to knowledge technology.

2.2. Artificial Neural Networks

The brain is an active organ. However, without a definition of the active capabilities of natural intelligence, an Artificial Neural Network (ANN) is a passive network, no matter how many neurons are connected, and no matter its network configuration.

ANN is a useful technique. However, it is only a storage system for fuzzy data, and it has no active capabilities needed for intelligence.

Some people believe that an ANN can evolve intelligence "by itself" – category Evolutionary intelligence – because this technique is "inspired by nature". However, if building airplanes was "inspired by nature", airplanes would have feathers and flapping wings. But they can fly without them. So, feathers and flapping wings aren't essential for flight.

In the same way, neurons are not essential to intelligence. They are only dumb components – building blocks of the brain – like semiconductors are building blocks of a computer: A computer doesn't need semiconductors. It can be built entirely mechanical (Charles Babbage), or having vacuum tubes as building blocks (Eniac).

2.3. Knowledge technology

The quality of a system is determined by the quality of its output, divided by the quality of its input. The quality of the current approach to knowledge technology is very bad: Rich, meaningful sentences in, (linked) keywords out (which might be filled-in on the blanks of a human-written sentence construction).

To prove the poor state of the current approach to knowledge technology: You will not find any system – other than Thinknowlogy – able to convert a sentence like "*John is the father of Paul.*" in a generic (flexible) way to "*Paul has a father, called John.*". Both sentences have (almost) the same meaning. So, it must be possible to convert one sentence to the other, and back.

Only if the involved laws of nature are understood, one is able to convert light to electricity and back, motion to electricity and back, and so on. In the same way, converting one sentence to another – while preserving the meaning – requires to understand the Natural Laws of Intelligence in grammar. However, no technique on AI and knowledge technology is able to deliver such a conversion in a generic way.

In its infancy, Thinknowlogy only accepts a limited grammar. However, its output has (almost) the same quality as its input, which is a quality ratio of (almost) 100%. It proves: Thinknowlogy preserves the meaning.

2.3.1. Fundamental flaws in knowledge technology

In nature (grammar), knowledge and logic are combined: Keywords contain knowledge, while non-keywords contain logic.

Despite the advice of non-technical linguists, the technical (computational) linguists of the 1960's insisted to throw away the natural logic (non-keywords), and to develop artificial logic instead, like by ontology, semantic libraries, statistics and keyword-based reasoning. So, the natural logic of sentences – expressed by words like definite article "*the*", conjunction "*or*", possessive verb "*has / have*" and past tense verbs "*was / were*" and "*had*" – is lost in the current approach to knowledge technology.

No matter what technique is used, there is no way replace the natural logic expressed by non-keywords. As a consequence, search engines are limited to search for keywords, the integration of automated reasoning and natural language got stuck, and disambiguation (solving ambiguity) is still the biggest problem in knowledge technology.

In this way, a blind spot has been created in knowledge technology.

A science integrates its involved disciplines. However, the field of AI and knowledge technology doesn't. It is unable to integrate (automated) reasoning and natural language:

- Reasoners (like Prolog) are able to reason, but their results – derived knowledge – can't be expressed in readable and automatically constructed sentences;
- Chatbots and Virtual (Personal) Assistants may well produce understandable sentences, but they are unable to reason logically. Even more, they are only able to select a human-written sentence in which they fill-in a user-written keyword;
- Controlled Natural Language (CNL) systems are very limited in integrating both disciplines.

Some people believe that meaning will emerge "by itself". See category Fout: Bron van verwijzing niet gevonden. Others believe that the meaning is preserved by using all words during the parsing of a sentence.

2.4. Self-organizing systems

Some people consider Artificial Life simulations, evolutionary algorithms, genetic algorithms, Artificial Neural Networks (ANN), fractals, and the forming of ice crystals as self-organizing systems. But is that true?

Self-organizing capabilities are synonym to intelligence, while “organizing” – without “self” – can be illustrated by the mess found in a teenager's bedroom:

Clearly a teenager's bedroom has no self-organizing properties. So, teenagers themselves need to show active behavior in organizing of their bedroom: Books, toys and clothing need to be grouped and stored (school books separate from leisure books, computer games separate from airplane models, sports clothing separate from evening dresses, and so on). And toys that doesn't match the teenager's maturity – like dolls and toy cars – need to be given-away or at least stored (archived) outside the teenager's bedroom.

Let's determine whether a system is self-organizing, or not:

- Genetic algorithms are surely not self-organizing. In contrary, these algorithms are designed to search in an unorganized way: at random;
- Evolutionary algorithms are not self-organizing, because they are designed to find an optimum value, not to group what belongs together, nor to separate what doesn't belong together, nor to archive when data becomes obsolete, and so on;
- An Artificial Neural Network doesn't archive when fuzzy data becomes obsolete, and it is only storage system for fuzzy data. But one can argue if an ANN is able to group what belongs together and to separate what doesn't belong together. However, the test set – human influence – determines whether the stored information is correct or not. So, also an ANN isn't a self-organizing system;
- Fractals are static algorithms, delivering the same pattern every time. They have none of the active capabilities of intelligence. So, fractals are not self-organizing, and have therefore nothing to do with intelligence;
- Also the forming of ice crystals and ice crystal patterns is passive: The involved water molecules just obey the laws of physics, which doesn't include the active capabilities of intelligence. So, ice crystals have no self-organizing capabilities;
- Speech detection (from speech to written text) maps an input pattern to a defined output pattern (character or word). Mapping is a one-on-one peer connection. It isn't grouping, nor separating. So, speech detection has nothing to do with intelligence;
- Artificial Life simulations show the **behavior** of living creatures. But the conditions are programmed upfront. To illustrate: A flight simulator simulates the **behavior** of flight, without being able to fly. Adding random, doesn't provide Artificial Life simulations any of the active capabilities of intelligence. It is just another variety on the same theme.

3. The fundamental approach of Thinknowlogy

In order to contribute to science, the scientific method needs to be applied, starting with an unambiguous, fundamental (=natural) and deterministic (=implementable) definition:

Natural intelligence basically means: **self-organization**. It is the extent to which one is able:
- to independently group what belongs together;
- to independently separate what doesn't belong together;
- to independently archive what is no longer relevant;
- to independently plan future actions;
- to independently foresee the consequences that the planned actions will have;
- to independently learn from mistakes.

Natural intelligence applied to language is called: **meaning**.

3.1. Natural Laws of Intelligence in grammar

Grammar provides clues of meaning to our brain how to structure the gained knowledge. These clues include specific words for grouping, separating, archiving and planning. By utilizing these clues of meaning provided by grammar – or Natural Laws of Intelligence in grammar – we are able to implement a self-organizing knowledge technology, similar to the way nature works:

- Conjunction "*and*" has the intelligent (self-organizing) function in language to group knowledge;
- Conjunction "*or*" has the intelligent (self-organizing) function in language to separate knowledge;
- A definite article (in English: "*the*") has the intelligent (self-organizing) function in language to archive knowledge;
- An indefinite article (in English: "*a*") defines a structure;
- Basic verb "*am/is/are/was/were*" defines defining logic;
- Basic verb "*has/have/had*" defines possessive logic.

Besides that, grammar also provides logical reasoning constructions, as described from:
- Paragraph Merged Conclusion of the In simple words document;
- Paragraph 2.3.1 Specification Substitution Conclusions of the Theory document.

The implementation of these Natural Laws of Intelligence in grammar drive a set of structuring algorithms in my system, in order to independently group, separate and archive knowledge in its knowledge base.

3.1.1. Example: Autonomous generation of questions

Not a single technique in the field of AI and knowledge technology is able to implement this example of automatic generation of questions:

> Entered: *"A person is a man or a woman."*
> Entered: *"Addison is a person."*
•
• Generated question:
< *"Is Addison a man or a woman?"*

The implementation of this kind of automatically generated questions is extremely simple when Natural Laws of Intelligence in grammar are utilized:

- A Natural Law of Intelligence in grammar: Conjunction "*or*" has an intelligent (self-organizing) function in language, to separate knowledge;
- Given "*A 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?"*.

3.1.2. Controlled Natural Language / Context-Free Grammar

Controlled Natural Language (CNL) or Context-Free Grammar is said to avoid ambiguity. However, by avoiding ambiguity, it also avoids Natural Laws of Intelligence in grammar, which are crucial to reasoning. For example, CNL systems – like the one developed by the Attempto project – avoid the use of conjunction "*or*".

So, instead of "*A person is a man or a woman.*", a CNL system needs three sentences to describe the same, avoiding conjunction "*or*":

- "*Every man is a person.*";
- "*Every woman is a person.*";
- "*No woman is a man and no man is a woman.*".

Besides that, CNL systems fail to convert a sentence like "*John is the father of Paul.*" to "*Paul has a father, called John.*" in a generic (flexible) way:

- First of all, an extra rule must be added: "*If a man(1) is-the-father-of a man(2) then the man(2) has-a-father-called the man(1)*";
- Besides that, a CNL system needs the relation between John and Paul written with hyphens between the words: "*John is-the-father-of Paul.*". The outcome has hyphens too: "*Paul has-a-father-called John.*";
- Even more, each and ever relation pair needs to be added manually, for "*mother*", for "*parent*", for "*child*", for "*sister*", for "*brother*", and so on.

This example makes clear that CNL systems fail to integrate reasoning and natural language.

3.1.3. Improve your ontology system gradually towards a grammar-based approach

Why wait for scientists to accept a grammar-based approach? You can improve your own ontology system gradually – step by step – towards a grammar-based approach. Below the first steps are listed:

- Scan any assertion for pattern: *{proper noun 1} is-a-{noun}-of {proper noun 2}*;
- If there is a match, create a new assertion, if it doesn't already exist: *{proper noun 2} has-a-{noun}-called {proper noun 1}*;
- Example: "*John is-a-parent-of Paul.*" will create: "*Paul has-a-parent-called John.*".

- Scan any assertion for pattern: *{proper noun 1} has-a-{noun}-called {proper noun 2}*;
- If there is a match, create a new assertion, if it doesn't already exist: *{proper noun 2} is-a-{noun}-of {proper noun 1}*;
- Example: "*Paul has-a-parent-called John.*" will create: "*John is-a-parent-of Paul.*".

- Scan any assertion for pattern: *A {noun 1} has a {noun 2}*;
- If there is a match, create a new assertion, if it doesn't already exist: *A {noun 2} is-part-of a {noun 1}*;
- Example: "*A car has an engine.*" will create: "*An engine is-part-of a car.*";
- Addition: "*Every car has an engine.*" will create: "*An engine is-part-of every car.*".

More suggestions to improve your ontology system towards a grammar-based approach:

- To combine similar assertions to one expanded assertion, like;
- To have the system accept and create assertions without hyphens, only if those assertions match the embedded grammar rules;
- Read the design documents – or contact me – for more gradual improvements.

3.2. Intelligence – more into depth

Intelligence is a natural phenomenon, which can be described as the extent to which one is able to organize independently. More specific: to autonomously avoid chaos, to autonomously create order and to autonomously restore order.

The basic capabilities of intelligence are:

- Grouping (combining) of individual or separate objects, with the aim of achieving a goal that can not be achieved by either of those objects separately;
- Separating (differentiating) compound or intertwined objects, with the aim to clarify the situation, by putting them in their own context;
- Archiving of obsolete information, separating current from obsolete information;
- Planning future actions, setting goals and anticipation to 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: numbers, language and spatial objects. Intelligence applied to language is called: **meaning**. Grouping of numbers, we call: adding. Separating of numbers, we call: subtracting.

Deepening:

- Grouping is the process of creation;
- Separating is the process of understanding;
- Archiving is the process of omitting;
- Planning is the process of governing.

The remaining two capabilities of intelligence (foreseeing and learning from mistakes) require feedback, the use of knowledge and experience. This part of intelligence is called: **wisdom**.

I am implementing grouping, separating and archiving as much as possible, while leaving the implementation of the remaining capabilities to future generations.

3.2.1. Definition of autonomy

In the definition of intelligence, the word “independently” or “autonomously” is used, and it needs to be defined as well:

An autonomous system relies on the consistency of a **natural** (or consistent) source. So, an autonomously intelligent system relies on the consistency of a natural source of intelligence.

Currently, information systems are relying on the use of **artificial** sources, like semantic vocabularies, ontology databases and statistics. Thinknowlogy utilizes a natural source of intelligence: grammar, as will be explained in the next paragraph.

Illustrating the difference between artificial intelligent systems and autonomously intelligent systems by a known Chinese saying: “*Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime*”.

3.2.2. IQ test

When comparing the assignments of an IQ test to the definition of intelligence, it becomes clearly that IQ tests are focused on the capabilities grouping and separating, rather than archiving, planning, foreseeing and learning from mistakes.

But more important than a high IQ score, is the question how close one's world view is to the way nature works. One can have an extremely high IQ score and develop many new theories. But what is the contribution of those theories, when they explain a biased world view rather than the way nature works?

3.3. Surpassing human intelligence

In AI, some people try to build a general purpose intelligent machine, even without defining natural intelligence itself.

Chess computers and bulldozers are able to surpass human capabilities in their task: Chess computers are able to beat human chess players, and bulldozers are able to beat humans in the amount of moved dirt. But these systems are only able surpass humans in a **specific task**, because they are specifically designed for their purpose, while human capabilities are **general purpose**: Most humans are able to play chess to some extent and most humans are able to move dirt from A to B. However, a bulldozer isn't able to play chess and a chess computer isn't able to move dirt.

It is possible to have a bulldozer with built-in chess computer. However, when multiple specific designs are combined in one system – in order to make the system as versatile as can be – the overall design becomes weaker and less practical. Another example: Once in a while, people try to build a road-legal airplane, or a car able to fly. It is possible, but its design is very weak.

Humans are subject to laws of nature. Humans are therefore limited to design systems to perform specific tasks. It requires to interfere with laws of nature in order to break free from this human limitation of designing systems for specific tasks. And interference with laws of nature requires divine capabilities, to be supernatural, to be a god.

If macro-evolution exists, it breaks laws of nature. However, this assumed emergence of new – and increasingly more advanced – functions by random mutations has never been observed in artificial systems. More over, the evolution theory is in conflict with supernatural entities, trying to explain the origin of species without supernatural capabilities. So, we can't expect artificial systems to surpass human intelligence. On the other hand, the fact that humans are generally purpose intelligent, proves their divine origin.

Isn't a computer a general purpose machine? No, a computer is an **open system**. It is open to run any application obeying the installed operating system. But it can't move dirt from A to B, nor toast a slice of bread.

3.3.1. Free will and morality

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 laws of nature. Therefore, spirits can't be caught in machines, which are bound by laws of nature. So, a machine will never have a spirit; a free will and an autonomously controlled set of morals like humans have.

3.4. Summary

Fundamental science (researching logic and laws of nature)	**Cognitive science** (researching behavior)
Wright brothers: Laws of Physics, based on nature	"Inspired by nature": feathers and flapping wings
Airplane	Flight simulator
Definition required	No definition required
Artificial implementation of natural laws of intelligence	Simulation of behavior
Natural intelligence: to independently group, separate, archive, plan, foresee and learn from mistakes.	Programmed intelligence: Humans are the only intelligent factor.
In nature (grammar), knowledge and logic are combined: • Keywords contain knowledge; • Non-keywords contain rules how to structure the knowledge.	Knowledge technology: Applying smart algorithms to keywords, and ignoring the intelligent function of non-keywords.
Natural meaning: to independently group, separate, archive and plan.	Trying to reconstruct the meaning by linking keywords.
Integration of disciplines: > Entered: *"A person is a man or a woman."* > Entered: *"Addison is a person."* • • Generated question: < *"Is Addison a man or a woman?"*	No integration of disciplines
Disambiguation	Ambiguity

4. The evolution theory is a religion (the religion of denial)

As long as we – humans – fail to create life from dead material, the origin of life can only be believed, because we are not in control of life, like we can control electricity. And as long as evolutionists fail to manipulate macro-evolution – for example by forcing a transition – the evolution theory is not scientific, because evolutionists are not in control of this assumed process.

Any Code of Conduct on scientific research endorses: Science is observable, testable, repeatable and falsifiable. However, the origin of life – including intelligence and natural language – lies in the past. So, it can't be observed, tested, repeated and falsified. And no scientist was present to gather hard and direct evidence. Therefore, the origin of life itself – including intelligence and natural language – can't be part of science. Its origin can only be assumed or believed. So, the evolution theory and derivative theories can't be scientifically proven. They are a belief or religion, in the same way as creation by God is a belief or religion.

More over, macro-evolution assumes that the Second Law of Thermodynamics can be broken, and the Big Bang theory assumes that both the First Law of Thermodynamics and the speed of light can be broken. So, the evolution theory and Big Bang theory assume a supernatural entity, able to defy laws of nature. And a supernatural entity we usually call: a god. So, the evolution theory is a belief, a religion.

The evolution theory is nothing more than an interpretation of the past, that fails to contribute to the future. It only contributes to itself.

As long as scientists fail to convert a simple sentence like "*John is the father of Paul.*" in a generic (flexible) way to "*Paul has a father, called John.*", they are not in control of natural intelligence and natural language. Despite their claims that the evolution theory would be scientific, evolutionists have not even a clue on natural intelligence and natural language.

The only thing evolutionists are in control of, is the process of denial. They have mastered denial to perfection – elevated denial to a religion – which they will deny.

Wouldn't it be better if scientists stop to celebrate the evolution theory as the religion of denial, and start to research the way nature works? Isn't that what tax payers pay them to do, researching the way nature works, rather than funding a religion, the religion of denial?

4.1. Overwhelming evidence...

It is said that there is "overwhelming evidence" for the evolution theory. In the same way, there is "overwhelming evidence" for the existence of Santa Claus too, based on facts:

- Advertisements forecast his coming;
- Then he appears everywhere at once;
- Presents are given;
- His address is known: North pole 1;
- You can meet him in person;
- And if you post/mail/text/app a message, you will get a response.

So, Santa Claus must be alive, until you dive deeper into the fairy tale…

4.2. If you do not believe in cows...

We all know: milk contains components like water, living bacteria and fungi.

If you do not believe in cows and you would examine a glass of milk, you have to conclude: The living bacteria and fungi have created the milk from water. Scientists go wrong that easy when it comes to the origin of the universe and the origin of life.

However, if you do believe in cows, you know that those animals produce milk from grass and water. Furthermore: The living bacteria and fungi actually degenerate the milk, instead of creating it. The cows are the metaphor for God, who has designed and created the universe, laws of nature and life. So, "evolution" is in fact: degeneration.

Example "borrowed" from Peter Scheele. More info on Wikipedia: Devolution (biology).

4.3. Mona Lisa

When I look at the Mona Lisa, I know it is a master piece of a genius. And exactly one person has claimed to be the artist: Leonardo da Vinci. I believe him, because he has left a detailed description how he has created this painting. We can learn from this artist to utilize Natural Laws of Geometry in order to create beauty.

When I look at nature, I know it is a master piece of a genius. And exactly one person has claimed to be the artist: God. I believe him, because he has left a detailed description how he has created nature. We can learn from this artist for example to utilize Natural Laws of Intelligence in order to create intelligence artificially in software.

4.4. Natural Laws of intelligence are in conflict with the evolution theory

The existence of Natural Laws of Intelligence in grammar is in deep conflict with the evolution theory:

- The existence of Natural Laws of Intelligence in grammar proves that natural language is a **structured** system – obeying laws of nature – while the evolution theory assumes that natural language have been evolved from **chaos**;
- The existence of Natural Laws of Intelligence in grammar also proves that both intelligence and natural language are related – natural language obeys natural laws of intelligence – while the evolution theory assumes that both intelligence and natural language have been evolved independently from chaos, and that they therefore aren't related to each other;
- Besides that, the evolution theory doesn't support the emergence of the laws of nature. So, Natural Laws of Intelligence can't have emerged in grammar, billions of years after the assumed Big Bang;
- Even more, it seems that the Natural Laws of Intelligence in grammar are universal – quite similar for each language – which means that languages must have a common origin, while the evolution theory assumes that languages have been evolved independently, without common origin.

So, the existence of Natural Laws of Intelligence in grammar can't be explained by the evolution theory.

4.5. Complex systems

A lot of evolutionists are fascinated by complexity. Some even seem to strive for it, in the hope to invoke macro-evolution. However, striving for complexity defies all rules of common sense:

- "*The ability to simplify means to eliminate the unnecessary so that the necessary may speak*" (Hans Hofmann);
- "*Things should be as simple as possible, but no simpler*" (Albert Einstein);
- "*If you can't explain it simply, you don't understand it well enough*" (Albert Einstein);
- "*Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius – and a lot of courage – to move in the opposite direction*" (Albert Einstein).

If an observer considers a system to be complex, it is the observer who lacks overview and knowledge. (Only if the observer considers the system unnecessarily complex, he/she has a better overview than the designer of that system.)

Natural language is considered to be a complex system, too complex to be processed by current techniques. However, an example like the Autonomous generation of questions doesn't exceed secondary school level. So, it must be a lack of overview and knowledge of scientists, by which they fail to understand the childishly simple meaning (intelligent function) of conjunction "*or*".

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", amongst 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", amongst 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).