Project AWAKE

„Analog Worlds and Artificial Kind Existence"

by
Walter Crismareanu
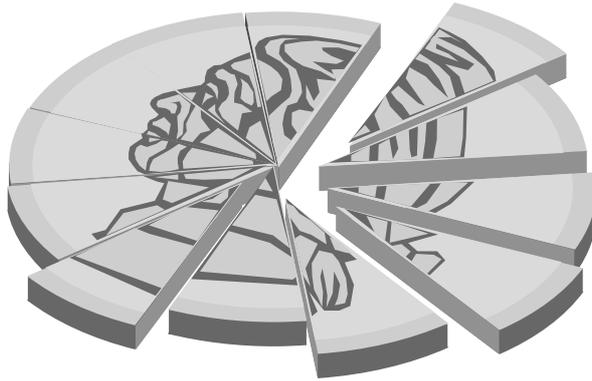
Available documents

The following documents are available for this part:

No.	Document	Description
1	Collection overview	Short presentation of the collection of writings
2	AI theoretical background	Description of the actual AI concepts
3	New concept	Description of the new concept
4	Book One	Extract of the first book.

„Men and machines"

by

Walter Crismareanu

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Legend for used fonts

Typestyle
      standard   - fluent text
      CAPITAL LETTERS   - ACCENTUATION
      bold   **- foreground**
      italic   *- statement*
      ""   - quotation

Font color
      black   - fluent text
      red   - problem/error
      green   **- success**
      blue   - milestone

Space Odyssey 2010:
"I understand how you feel.
You see, it's all very clear to me now.
The whole thing.
It's wonderful."

Preface

I have actually been involved for the last twenty years in software development in Europe and have worked with all kind of computer technologies, from mainframe to personal computers. As a project leader, consultant, trainer and developer I worked for a lot of companies from different branches of business with a variety of concepts and technologies.

During this time a lot of problems appeared and I solved most of them. The rest of the problems could be solved only partially or with a great amount of time and money. One reason is the limited possibilities of the hardware.

The main reason for most of the problems are the defective concepts.

They are useful when the task „matches" with the concept. A software developer has the suitable concept and tools for a certain area. A developer finds out very quickly the borders of this concept. Extensions and further development inside the concept are not welcome. The concept does not allow any other modification. It is „responsible only for this kind of tasks", another type of task will not be performed. Never mind how long and how often you try to „squeeze" the task in the concept, the success is not visible.

Here are some examples:
Until now, only concepts about virtual three-dimensional environments have been known e.g. representations of virtual 3D worlds in VRML, however all these concepts are without any unit of measurement for the space dimensions.
The method of object orientated programming implemented in conventional programming languages like C++ or Smalltalk, does not contain any concept of space environment for all created objects, a time dimension is also not available.
A simultaneous run of all programs and the „logical" components which they include (I mean simultaneously and not multitasking by time-sharing) is not possible with the present technology, because a computer contains only one processor.

What can we do now? Need makes you inventive. First I wrote down my problems and after that I started to develop solutions for each of them.

So I created a new concept for the software development. This new concept unifies all the components mentioned above and has a lot more features.

The great number of sciences related to data processing, such as philosophy, physics, chemistry, cytology, histology, genetics, embryology, biology, anatomy, physiology, neurology, psychology, sociology, business management, economics, ethics, history, mythology, linguistics, pedagogy and especially logic gave my work an additional motivation.

I wrote this book giving up consciously and on purpose the computer language in order to give to all my readers the possibility to follow my thoughts.

Introduction

The way of analyzing a problem is always very difficult. There are too many obstacles, which dim our imagination about the reality and the objects contained inside.

For this reason I have developed the following theoretical scenario, also known as a thought experiment, a method of examination and research:

I see reality as an aquarium - means a three dimensional space with an additional dimension of time - while I am staying outside and I do not intervene whatever happens even if it is very tempting.

I have no comprehension for the contained objects and processes and I also do not have any interests and I am impartial to everybody. I have no sympathies and I also have no other feelings for anything. I do not identify myself with anybody. I do not judge or estimate the actions of the involved persons. I do not want to built any connection with the objects in order to decide what they can or have to do. *The objects should and can do what they want*. I have nothing to say, my only wish is exclusively the complete observation of all events and processes in every detail, *the "what would happen if" speculation will not be used*.

I have every thinkable possibility even if this seems impossible at the first look. I do not have to have fear that it could be to cold or to hot. The high pressure inside an object can not do me any harm.

I can be wherever and especially whenever I want, *space and time are of no importance, although they build the base of every happening.*. I can hold on the time flow and I can also go on with it, however I can not turn the time back. If I want to observe something, then I can choose my entry point at any time I wish and this I can do as often as I need. A time slow motion with different speed for the flow is also available.

A magic eye gives me the possibility to explore the smallest as well as the biggest objects, I can see everything.

With this kind of analysis all the tools and equipment, which normally accompany an investigation, are not needed any more, that's why I do not need any records and the complicated calculations and evaluations of the data, which are mostly defective and incomplete. I am not under time pressure because I can not miss anything. I can write as many notices about this or that as I need or want. I do not have to imagine anything because I can look complete calm to whatsoever and I do not depend on anybody.

This way of investigation produced remarkable and amazing results. It put my imagination about the reality upside down, exceeded my greatest expectations more then once and fulfilled my wildest dreams far beyond any borders.

The objects men and machines as well as the connection between them build the topics of these collection of writings.

Content

I gathered all my thoughts and experience and brought them to paper. What came out is a collection of books and writings with the following title and content:

"Men and machines".

Paper One.   Artificial intelligence – theoretical background
Paper Two.   Description of the new concept
Book One.   The actual problems in software development
Book Two.   The solutions
Book Three. The application fields
Book Four.   The software package
Book Five.   The first application: artificial intelligence
Book Six.   The computer architecture

As a result of the researches and deliberations made during the development of the new concept I also wrote a few dissertations to some related topics. They papers are very useful because they increase the understanding of the new concept. They also confirm its usage in many aspects of our everyday life.

Area: Classic works

No.	Title
1	Hammurapi: The punishment is a result of the social incapacity
2	Siddharta Gautama: Leaving emotions aside enables the recognition
3	Lao-Tze : The way of life
4	Sun-Tzi : The use of intelligence
5	Aristotle: Logic is the tool of thinking
6	David Hume: The template four our behavior is the human structure

Area: Human structure

No.	Topic
1	Conscious and unconscious decisions
2	The sights of human thinking
3	Talking with ourselves: A tool of the consciousness
4	The body language: a tool of the unconsciousness
5	The bricks of thinking: Selection, connection and comparison
6	The human behavior: A look into ourselves

Area: Human thinking and behavior

No.	Topic
1	People alone and people together: a gigantic difference
2	People with, against and for each other: Behavior and dynamics of groups
3	The misuse of thinking is the sad rule in our everyday life
4	Carrot or stick as a stimulation of thinking
5	The transmission of knowledge and the internal learning workflow
6	The milestones of human recognition

Structure

The collection consists of three parts:

> Part I.   The papers
> Part II.   The books
> Part III.   The dissertations

Part I. The papers

The two papers were ment as an introduction to the new concept:

No.	Paper	Content
1	Artificial intelligence Theoretical background	Overview about the current status in AI
2	Description of the concept	Overview about the principles and structure

Part II. The books

Hereby I wrote six books: the first book analyses the problems and the second describes the solutions.

I found ten major problems, which are ordered by their cause as follows:
> Part I.   The man.
> Part II.   The machine.
> Part III.   The interaction between man and machine.

In order to get a better overview I used the following structure: each problem is analyzed in an own chapter, so there are ten chapters. Each of these problems has a solution in a corresponding chapter of the second book.

The chapters one to ten have three sections:

Section	Book One. „The problems"	Book Two. „The solutions"

1	The analysis of the problem	The description of the solution
		    The requirements
		    The implementation
		    The comparison

2	The summary	The summary

3	The conclusion
	    The facts
	    The goals
		The reached goals

With this structure a comparison between the actual problems and the solutions which I developed is easy to make.

Each of the remaining books consists also of three parts:

Book Three: "The applications"
         Part I.   The task
         Part II.   The model
         Part III.   The implementation

Book Four: "The software package"
         Part I.   The development environment
         Part II.   The run-time environment
         Part III.   The evaluation environment

Book Five: "The first application: artificial intelligence"
         Part I.   The task
         Part II.   The analog model
         Part III.   The application

Book Six: "The computer architecture"
         Part I.   The computer hardware
         Part II.   The operating system
         Part III.   The hardware of the artificial intelligence

Part III. The dissertations

The dissertations consist also of three parts:
The area "Classics" connect the actual knowledge with the new concept.

Each dissertation of this area has the following structure:

No.	Part	Description
1	The author and its work	A description of the work
2	The analysis	An interpretation of the content
3	The comparison	The content of the work and the new concept

The dissertation of the area "Human structure" were thought as a reference material for the structure of the artificial intelligence.

The last six dissertations of the area "Human thinking and behavior" should prepare the education and embedding of the artificial intelligence into the human society.

Each dissertation of these two areas are build as follows:

No.	Part	Description
1	The topic	A description of the circumstances
2	The analysis	An interpretation of the facts
3	The comparison	The content the new concept

Final word

When we talk with others, we always address their consciousness. Sometimes we have a problem with the will. If it is our own or maybe the will of the others makes no fundamental difference. We use also emotions, we distribute them in a very generous manner and sometimes we also accept them. Regarding our possibilities, we don't have many choices at our disposal. At the end, one must not be a genius in order to live life and occasionally also to enjoy it. The famous fight about the survival of our own species, has been decided by our ancestors. All this we do only to fulfill our own necessities.
The following thoughts have kept their validity until nowadays:

„Lifting a spider web is no proof of big power;
seeing the sun and the moon is no proof of a sharp eye;
hearing the noise of thunder is no proof of a good ear." Sun-Tzi

„Chevying and hunting drives the mind crazy,
precious things lead into madness." Lao-Tze

Machines with human-like looking and behavior will enter our society. Lifeless objects will develop into intelligent subjects with body, mind and emotions and grow to spiritual maturity. In order to understand them, we only need to look into ourselves. In order to integrate them into our everyday life, their education and occupation is required. If they will represent a benefit for our lives, will be up to us. The rest is a self-runner mechanism.

Human qualities like trust in the own capabilities and generosity towards children build the basis for our confidence for the future. To be an example for all others requires a lot of patience and understanding, but the reward is overwhelming.

We people love stories. They give wings to our fantasy and feed our natural endeavor to subordinate our lives to a higher purpose. They open us always new possibilities to discover and fulfill our own destiny. Existence can take many different shapes, both living and lifeless one. The human body consists, besides many other things, of atoms, which were created of light a very long time ago everywhere in the stars. The unique of our human existence consists in their space distribution and interaction. Whether the sun at day or the far away at night, stars were, are and will be always our companion. In the darkness we feel lonely, abandoned and without any orientation. We are craving for the light of the stars just like each child misses the affection of its parents to feel secure. The circle of human life is closing with the handle to the stars. "***Where ever we are, we are always searching the way to heaven, cause there we are coming from and that is our true home: Back to eternity***."

I believe each human been can obtain the revelation only with and for himself alone.
One of my revelations is:

„The sense of life is,
to keep life itself alive and to spread it everywhere,
independently of its shape,type and origin."

Walter Crismareanu
2000 – 2003

Paper One. Artificial intelligence – theoretical background

From the collection
„Men and machines"

by
Walter Crismareanu

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Gattaca:

"They've got you looking so hard for any flaw, that after a while that's all that you see. For whatever it's worth, I'm here to tell you that it is possible. IT IS POSSIBLE."

Preface

For the readers

This document is pointed to everybody, which is related in some kind with AI. The author regards this document as a theoretical background of his computer research as described in six books. The great number of sciences related to data processing, such as philosophy, physics, chemistry, cytology, histology, genetics, embryology, biology, anatomy, physiology, neurology, psychology, sociology, business management, economics, ethics, history, mythology, linguistics, pedagogy and especially logic gave his work an additional motivation.

This document was thought to provide an incentive, on the one hand ***to discover the human thinking independently of themselves***, *to explore themselves and ALSO to accept, even if one does not like what one found*, and on the other hand to have the certainty that it is possible to reach the goals of AI. How can one find a solution? *To find a solution is always very hard, the solution itself is always simple.*

As a final word here are some thoughts of Sun Tzi. The Chinese thinker, which started as an unnoticed philosopher in his homeland and ended as a successful warlord abroad, describes in the forth chapter, "Tactics", of his only book, "The art of war", amongst many other things also the evaluation of the thinking abilities of a man.

> **1.** *"It is **no proof** for outstanding performance,*
> *if you see the victory, only when it is seen by everybody else."*
> **2.** *"It is **no proof** for outstanding performance,*
> *when you fight and win and the whole kingdom says: Well done."*
> **3.** *"**A proof** for outstanding performance is winning WITHOUT fighting."*
> **4.** *"There is **no appreciation** for outstanding performance,*
> ***neither for wisdom**, because the circumstances of the victory were not brought to light,*
> ***nor for courage**, because no single drop of blood was shed."*

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Introduction to AI

Artificial intelligence - AI - is a very complex and interdisciplinary science.

AI goals

1. To **understand** human intelligence.
2. To **reproduce** human perception, mind performance and related action by machines.

As a consequence there is the hope to simplify work by rationalization.

AI requests

AI should contain the following capabilities:

1. **The reception of information from the outside world.** This happens through **sensors**, e.g. a microphone, a camera or a temperature sensor.
2. **The transmission** of the received information **to a computer**.
3. Further on AI should have a **mass storage** resource. *The big problem is to find a convenient format for computerization*.
4. In order to built up this resource, AI must contain a **learning mechanism**.
5. Furthermore **speech and video processing** are needed for **the communication with other intelligent individuals**.
6. A complex request to AI is **recognition**. In order to recognize a situation, there are needed among other things the sensors and *already stored knowledge*, which have to be related to the new situation.
7. Further complex capabilities are the **adaptation to the environment** and the **flexibility**.

Actual status in AI

There are different methods known to realize AI, from which the neuronal networks are the most likely one to represent the structure of the human brain. Other known proceedings are expert systems, fuzzy systems and genetic algorithms.

There is no artificial system at the present time, which fulfills all these features, not even approximately.

Nowadays, there can be designed merely robots, which can imitate the movement of insects.

Conclusion

There are several unsolved problems, which can be categorized by their origin as follows:

1. The theoretical basis
The human brain is presently neither full known nor **correct interpreted**.

2. The technical implementation
Subsequently, one can not reproduce something, what is neither known nor **understood**.

The goals of AI are so high, that they represent at the same time also the biggest problems!

The machine as reproduction

We reproduce something in several steps.

1. The observation

At first we observe the objects from our environment, which are of our interest. We perceive them with our sensory organs, therefore we recognize certain attributes, e.g. shape, color, position, etc. Afterwards there comes the behavior towards us. We try to build an opinion by reacting with the objects We compare the results of this interaction, meaning the current observations, with our previous accumulated and stored knowledge.

2. The conclusions

If there is a corresponding answer, means identification, then we can take some conclusions concerning these objects. Then we say: "This or that object reacts **either** so and so **or** so and not differently to this and/or that **action**."

3. The rules

The conclusions are stored as rules in our imagination. Each rule will be stored in our brain in the "IF this occurs THEN that happens" format.

4. The selection

Now that the rules are established, we begin to create a similar object, where only the functionality stands in the foreground, means behavior towards us, NOT the properties. In order to create this similar object, we choose other objects from our environment, which contain the desired behavior fully or only partially.

5. The implementation

Now we connect all these objects in one way or another to a bigger object, which will be named a machine from now on. The first attempt, the prototype, will be improved until it will correspond to our imagination and needs. In order to achieve the coordination between all components of the prototype as well as its the integration in our everyday life, we calculate all the features we need.

The rules will be taken apart into separate terms, which have no spatial, temporal, material and logical connection, THIS AND ONLY THIS WAY they can be afterwards converted into mathematical functions, depicted into ABSTRACT agreements.

The "IF this occurs, THEN that happens" format will be translated as a function. Each mathematical function consists of two sets of elements. For each element of the input set there is a corresponding one of the output set. The transformation from a rule to a function is the following: "This" is an element of the input set, "that" is an element of the output set and the rule will be replaced by a "known" mathematical formula.

After the tuning process is finished, the mass production will occur, etc.

So this is the way we build our machines, by calculating something. What can we calculate with the help of mathematics? *Everything we can quantify* and as a result it can also be measured.

Calculability

The question of calculability can be divided into five models as follows:

1. The theory: The mathematical model

Calculability is always a RELATIVE term and DEPENDS on the available MATHEMATICAL resources.

The Church-Thesis: The calculable functions are general recursive functions.

2. The machine: The logic-operational model (Turing-machine)

The Turing machine consists of a ribbon, with an endless length, on which symbols could be written and from which they could be read again, a read/write head moveable to left and right and of a state and output table.

The Turing-Thesis: Each calculable function can be computed by this mechanism.

The thesis was developed almost simultaneously with the Church thesis and Turing himself showed, that they are equivalent. With the Turing machine, programming was the first time possible, at a time where no computer was built yet.

3. The improved machine: The computer model (von Neumann universal computer)

By using self-changing programs, computers are able to compute all general recursive functions.

4. The life as a pattern: The model of cell automaton

It will be operated in a computational space, where all data are processed parallel and simultaneously.

The basic problem of cell automatons is the parallel and simultaneous processing, as well as the co-ordination and communication between the cells.

The meaning of a cell as well as the cooperation between cells inside a multi-cellular organisms still remain unsolved problems.

5. The man as a pattern: The biological model (neuronal networks)

With the help of so-called mathematical "neurons", in other words functions, there is the attempt to imitate biological neuronal networks as information processing systems.

Although there is the assumption, that the Neuron is the brick of human intelligence, and although its functionality is very well known, *there is no reasonable explanation how to use it*.

On the contrary, the original functionality is replaced by other mathematical functions from any type and origin. *The meaning of a Neuron remains an unsolved problem*.

The term "neuronal networks" is under THESE circumstances completely unfounded!

Conclusion

Cell automatons and neuronal networks are in many fields potentially more efficient than conventional computers and John von Neumann took as a draft for the architecture of the universal computer the human brain as the basis and not the other way around. The human brain can solve problems, which is impossible for every conventional computer. However, **it is actually unknown how individual elements can build complex and parallel systems, in order to receive and process information**, this is the reason why we use the von Neumann universal computer. *And this fact will last some time.*

The **architecture of the universal computer corresponds roughly** to the usual brain structure of a man with **consciousness**, foreground on the screen, and **subconscious**, background, where the following rule will apply*: The consciousness takes control of all activities and decides at the same time what will be considered as background*, namely all intermediary steps. **But, one can carry out consciously only one step at once.** For this reason the flow in our consciousness is always serial. Our entire behavior is discrete from other unconnected events. **This way of thinking decides on the methods used to obtain a result**, in this case: *isolated, static, unilateral, approximately and relative,* exactly those resources which are used in mathematics. This way of thinking contains however apparently one big advantage: The consciousness is told from outside in small mouthfuls what it has to do AND which meaning the actual input has. *So, we do not want to build a machine at all, if we do not know exactly what it does, even if it delivers the desired result in a tenth of a second.*

If a machine would have a subconscious with the same structure as the human brain, we would not be able to comprehend what would happen in the inside. *We can not even understand ourselves.* The machine would think in this case independently, could develop own wishes and ideas and with this we would not be able neither to understand nor to control it. Our own attitude for this case is unambiguous: *IF there is something that **we do not understand,** never mind how good and nice the whole thing is, **then** it will be categorized as a **potential threat** and must be always kept under surveillance. **IF** however **it will do something independently,** means WITHOUT our demand or prior approval, **then it must be destroyed**,* because we lost our control of it and who knows what it can cause. Our own existence could be at stake and that is completely beyond our comprehension.

WE and only WE ALONE are the dominant species on this planet and this hard obtained achievement must be defended under all circumstances, at all costs. At the beginning there were OTHER animal species, later there was slavery, afterwards we created the machines. Today there are the computers and tomorrow the AI. *The human behavior however did not change.* It can be defined as follows: *"I say, you do! If NOT, then everything will be destroyed."* This is the reason why we have a lot of laws to categorize and punish "bad behavior", but we have no system to organize and reward "good behavior".

No wonder that both models, which have life as a template have no chance to be understood never mind to be realized. *We have no respect for life at all.* Besides this, *life does NOT consist of ABSTRACT terms*, **which can be used without any regard to** *space, time, light and organized matter, which define reality. We have subjugated our mind exclusively to mathematics and we consider everything in life only as numbers.* This fact causes us a lot of problems: The behavior reflects our very limited way of thinking and with this we can not get farther.

- "*Hmm, maybe there is somebody, who thinks differently and finds the solution*."
- "*BUT, could this person be kept long enough under control until* **WE** *created and tested successfully the first prototype before going afterwards as usual to mass production?*"
- "*Don't worry. If NOT, then ..."*

Stagnation

Why is there at the time no breakthrough in AI, although we all know, that millions of people from all fields of activities are working very hard night and day for years under the leadership of recognized scientists and with tremendous financial resources, to coax out the secret of human intelligence out of nature? Where is the problem?

The reason

There are **two main reasons:** *1. What is the meaning of a Neuron? 2. The exclusion of time.* Why? *Our consciousness is itself the problem. It builds up a trap for our mind. Life is not serial, only our consciousness is. All creatures exist at the same time simultaneously, meaning in parallel. We mix up the continuous flow of time with the sequential flow of thoughts in our consciousness. Our subconscious works always in parallel and is permanent, even if we are not aware of this fact. Why do we adhere in this case, ONLY to our consciousness?* First *we communicate with other people by addressing their consciousness* and second *we "believe" it is THE expression of our own "free" will: "I say, you do...".* However, our consciousness is merely an application of our brain structure, namely a network of specialized cells called neurons.

What is truth?

Well, **there are THREE TYPES OF TRUTH**:

1. **THE ABSOLUTE TRUTH,**
    only the "naked" facts,
    e.g. the existence of our world, the processes inside,
    where all people and all creatures accept these fact unconditionally.
    From that point of view there is only one absolute truth and this truth is for everybody.

2. **THE PERSONAL TRUTH,**
    the fact that each of us is a part of this world and also exists in this world,
    e.g. our own existence, our own body,
    what each of us is, what we feel and do, how we react with our environment, what we want, like, must, can, know, use and have; how we live and experience life in general and especially from our own life.
    From that point of view there are as many personal truths as creatures on earth.

3. **THE RELATIVE TRUTH,**
    the interpretation of the facts,
    e.g. what is our world, how and why it functions like this and not in any other way,
    the interpretation of the facts from the point of view of only one single human being, or expressed in the vernacular: "The truth is in the eye of the beholder".
    From that point of view there are several relative truths to one and only fact, also called a personal opinion.

Our own existence, **the personal truth, is the LINK between the two truths**:
    a. The **absolute truth**, *the existence of our world.*
    b. The **relative truth**, *the limited, discrete and incomplete representation about parts of our world in the form of knowledge.*

Nevertheless, the relative truth, **our opinion**, *is ONLY a part of the personal truth,* **our body**, *and on his part it is ONLY a part of the absolute truth,* **our world**.

What is thinking?

The **REPRESENTATION** of facts always needs a recording device, in our case the human brain. With it we also need sensors, the sensory organs, and a memory, the human memory. *What we PERCEIVE is unfortunately only a fraction of the real world. What and how we store something is dependent from our current mood and knowledge.* The so recorded data should now be interpreted. We interpret the information by comparing them with the already stored data, our knowledge. *In order to make this comparison, we also need the corresponding specific information and logical interpretative tools, which are also stored as knowledge.*

This **KNOWLEDGE** is divided in different areas. Each area has its own point of view, also known as area of science, e.g. mathematics, physics, biology, art, personal experience, etc. These areas are not compatible among themselves, because each area has its own rules regarding the terms and their organization. In other words, *each knowledge area has its own "specialized Chinese" language.*

Nevertheless there are **two types of THINKING**: **conscious and unconscious**. *The unconscious thinking is always working independently and is responsible for many specialized parts. The conscious thinking will only be **activated if needed** and is responsible for the **co-ordination** between the separate specialized parts.* The question: **Which of the both is more important?** Will be answered with: **Both are important**. *They are mutually dependent.*

Perception, representation, knowledge, thinking and acting build together a unit, namely the nervous system. This unit is embedded in the human organism. All these parts have something in common, the NEURON. *A Neuron is still a cell, very specialized, but primary a cell.* The question: **What does an active and an inactive Neuron have in common**? Will be answered with: **Both of them exist and live**. Because every part of our brain is itself a **network of many, independent acting cells**, we should always keep in mind the **BEHAVIOR OF A CELL**: *A cell always adapts itself to the actual requests. If **more** used then develop further, if **often** used then keep, if **less** used then regress, if **not at all** used, then dissolve.* Subsequently: *A cell "is not thinking" about the consequences of its own behavior.*

As a result of the interaction between these three types of truth and the two types of thinking the following PROBLEMS occur:

Truth and thinking

Let's take for example **a natural phenomenon: there is night and day on earth.** *This is for all of us a fact, means the absolute truth is given. Why there is night and day, the experts can not agree on that, because each man considers his personal opinion as the only valid truth for himself.* Well**,** *although our own existence is a part of the absolute truth, our opinion about the existence is NOT an absolute truth.* Furthermore, this relative truth will only be accepted by other people if it is applicable to others. *What is applicable to others, is more or less left up to each individual person*, because each of us is living his own personal truth alone and only by himself. Unfortunately, there is no distinction between facts and personal opinions, on the contrary, a lot of people take over the opinions of other people without checking it, for which reason whatsoever. *Believing means accepting without any proof.* It is very difficult to build up an own opinion, because as a rule someone must have thorough knowledge. Besides this, each of us must think and think about, subsequently this requires a lot of time, patience and a concrete goal. *What we consider a goal, if there is one at all, is more than dubious.*

Abstraction is merely a method inside the relative truth. Abstraction requires a framework, in our case the human brain, which on his hand is a part of our body, a network of living cells.

The integration of thinking

During our lifetime there are different **FACTORS**, which **basically** influence or mint, furthermore **decide our ACTING**. One of them are our **NECESSITIES**, the second one is our **EMOTIONS**, the third is our **POSSIBILITIES** to achieve something.

One among many other POSSIBILITIES is our THINKING. It does not appear to us as necessary to see thinking again and again as the only key to success. There are **different situations** where we are forced to react quickly. If we did not **think** about this situation **before**, how and especially what we have to do or can do, then we take other possibilities for help, this means we **decide** ourselves in the very last minute how we **react**. *We delay a decision as long as possible for whatsoever reason until we are forced to do something, but then we have no time left to think about. Thinking is only a benefit for us, when we can achieve something with it and at the same time it does not obstruct or worse injure us.*

The **membership** to a certain group of persons, such as family, friends, etc., makes it easier to us on the one hand the **acting with others**, because we use standard behavior patterns, *on the other hand this fact makes it more difficult for us to discover our own thinking and to develop it to its true dimension.*

EMOTIONS vary just like food. Not only the **diversity** of emotions, but also their **intensity** are subjects of permanent **change**.

Time is also another component of emotions. They need a certain **period of time** to experience them. Each emotion needs one or more **triggers** and it also produces a **reaction**, however both of them are settled differently for each person.

Emotions have amongst many other effects *a big influence on our thinking.* What kind of influence? *The same situation will be evaluated in a totally different manner when personal feelings are triggered.* For example, the color red is suddenly not red anymore, it became pink or violet, sometimes even white or black, depending on the current mood. *The values of some terms are completely different as they were before. This transformation is only reversible when the emotions disappear.*

On the one hand, we can not disconnect our feelings, why should we do this anyway, on the other hand we can leave our thinking aside, at least sometimes, however both of them are parts of our life. Allow me the following comparison: if we consider our feelings as our ears and our thinking as our eyes, then we have **the possibility to set priorities**, namely to pay attention **either only** to our ears **or only** to our eyes. The question: **What is more important?** Will be answered with: **Both are important**. *They are mutually dependent.*

Our **NECESSITIES** determine also our actions, although some of them change during our lifetime. General physical necessities, such as breathing, drinking, eating, sleeping do not change, but others do change, e.g. emotional and spiritual necessities. *The human being changes during lifetime, therefore also the necessities. They show us the direction in our life.* Which necessities a person has is **dependent** on their **age**, **gender** and **lifestyle**. The lifestyle is determined by the **environment**. We can **influence** our environment, if we have the necessity. *We can always think independently, if we have this necessity or if somebody aroused this necessity in our behavior.*

Thinking is usually used as a tool, to fulfill our actual, always changing necessities and to satisfy our short-lived, always arising emotions. Who tends to think about the consequences of such a behavior? Where remains our own *"free" will*? *A freedom dependent on our own necessities, emotions and possibilities, namely the sum of the actual requests of each cell inside our body. In order to exist a living cell must always fulfill its own necessities first, namely the nutrition exchange. An active cell produces additional necessities for itself as well as for other cells, e.g. triggered thoughts, emotions.*

The abuse of thinking

In ancient Greece there was a movement, which called itself ironically Sofia, that means wisdom. The biggest question was: *What is more important,* what man knows or what man can achieve with it? Their supporters decided to choose the second possibility as the appropriate answer. (*The second possibility is still the ONLY valid one for many people*.) Their tool was the rhetoric. The same way the petals of a flower can be torn apart from each other, exactly the same way they tore up everything **known** to pieces, laws as well as **common sense**, until there was only one single statement left: *"Man is the unit of measurement for all things."* Each man should bring, (only?), his own interests to public attention. How? *"You must have the ability to convert the weaker thing into a stronger one."* After the initial enthusiasm, the general confusion came, namely civil war.

One among many other thinking errors is the mix-up between setting priorities and taking the decision what is important. Important for who? And when? *Everything in life is important, life itself is important*, namely the actual requests of each single cell. *The sense of priorities is to establish the dependencies of activities inside a process, but NOT to exclude them. The more we ignore, the more we go off the path of wisdom, namely the absolute truth.*

The reproduction of thinking

From **physics** we know the following: *Our **WORLD** consists of a three dimensional **SPACE and** of a continuos **TIME FLOW**. In this space there is **MATTER**, also called **OBJECTS**, which can be differently organized and which reacts with each other during time flow.*

From **psychology** we know the following: ***BEHAVIOR REQUIRES A LIVING ORGANISM.** A living organism **reacts independently to its** environment. An organism consists of many different components, which on their part consists of different components. The smallest unit is the cell. From this point of view **AN ORGANISM IS A NETWORK OF LIVING CELLS**, which react with each other. Each cell is an **OBJECT** of our **ENVIRONMENT,** also called our **WORLD**.*

From **technology** we know the following: *Machines are **LIFELESS TOOLS**. There is no unit, which can be used as a basis for creating networks of a higher organization, see **abstraction**.*

The reproduction of thinking and human morality

Machines should carry out that work, which we humans categorize as dangerous, annoying or too exhausting. Machines should not have own necessities or emotions, like animals for example. Machines are build with the purpose to do only what and when we want them to do.

The ideal AI: There is a family with only one child. The father is permanently at work while the mother lives at home only for the child. When the child needs something, never mind what, then the mother will supply it with full attention and understanding. No problems, no disturbance, no preaching the gospel, time delays or "I can not or I don't know", otherwise the child throws a tantrum. The "Always Only For Me Working Father" is the energy source for the "Big Mama", which builds the **BEHAVIOR OF AI** towards us humans, represented by the spoiled child.

*We build machines after our poor imagination about some few parts of the world and according to our social behavior however with the claim of benefit. Are these not ideal conditions to build and use **independent AI**, thinking but lifeless, empathic but with no feelings of its own, maybe someday to each human superior but in any case without any social rights, only obeying our own will, our capriciousness abandoned, adapting our always changing needs and exclusively serving our own individual and most of the time contradictory purposes?*

The breakthrough

Introduction

Why should one believe, that there is really a breakthrough in AI?
And why should one believe, that it has already been achieved by a single person?
Let us take a look at the three types of truth:

  1. **The absolute truth**
  2. **The personal truth**
  3. **The relative truth**

There are a lots of absolute truths and a lot more relative truths. Some of the relative truths are proved and they are accepted as personal truths, however there is no complete connection among themselves. Each relative truth has its own **laws**, because it gives an **explanation** about the **causes** and **actions** only from one single **point of view**, e.g. biologists explain the human brain only from the anatomic point of view and not also from the computerized or further from the philosophical point of view. Question: "*Where remains the union of all sciences and subsequently the union of all three types of truth?*"

The absolute truth is, that human intelligence exists. The relative truth tries to explain why and how it functions from the point of view of the personal truth.
In the **first step** the following question should be settled: **„What is intelligence?"** Well, *intelligence can be understood best by occupying, by respecting and by promoting it and NOT by neglecting, by despising or worse by fighting against it.*
In the **second step** *our way of thinking should be extended*, *according to the motto:* "***Think ALWAYS in parallel***." Why? *The **common way of dealing with our own thinking**, namely "to overcome one's weaker self", is damaging and shameful, but it corresponds with our social behavior. This behavior is anchored in the genetic reflexes of the human race, namely as **pre-defined connections between our cells**. The best way out, means **another behavior**, of this "hopeless" situation is by practicing **elementary education** on ourselves, namely by **establishing new connections between our cells by adding them to the already existing**.* Pestalozzi said once: *"**A child needs time, care and tenderness.**" **Intelligence is ALSO a child. A wonderful one**. Learning and forgiving is always more effective then punishing. Intelligence can not be punished.*

The integrative platform of all sciences is the real world. Where remains the union of all sciences? *Computing could be the missing link between them*. How? *By reproducing extracts of the real world in a computer*. How can one achieve this?
The solution can be reached in the following manner: *to evaluate the opinion of all other persons consistent within self referential framework, independent of who the person is, which makes a statement or when and under which circumstances that person lived.*
And now let us take a look at the last two models of calculability:
4. The model of cell automaton
        It will be operated in a computing space, where all data are processed parallel.
5. The biological model (neuronal networks)
        The Neuron is itself a cell and at the same time it is a part of the real world.

The theory of these two models has a high potential, but the actual implementation is unsatisfactory.
If these two models are merged and extended with a time dimension, *then one can achieve the two goals of AI resulting in the ground-breaking understanding in all areas of science, e.g. the simulation of different brain structure as a software application on a computer.*

 "*Is this possible?* *For whatever it's worth, I'm here to tell you that **IT IS POSSIBLE** .*"

Present status in the development of software solutions for the customers

The present hardware and software are not designed to satisfy all actual needs of the customers because they have been made to fulfill other requirements which were needed a very long time ago. The actual computer architecture is based on the design of John von Neumann in the period between 1940 and 1950. The present software is based on programming languages which have the same structure as the first programming language invented by the baroness Ada of Lovelace, she used during the 19th century in Great Britain in order to automate the textile manufacture factory of her father.

The actual hardware architecture is 50 years old, whilethe present software structure is 150 years old!

The actual concepts used to solve customer needs and tasks are made only for a very specific sub-area and can not be implemented to other areas.

The theories about parallel processing, workflow and artificial intelligence still need to be developed. The great number of related sciences to these topics make it very difficult to reach an agreement to satisfy the requirements.

The existing software does not integrate **the needs of the client**, such as:

1. **productivity increasing factors like:**
   - reusability of the source code independent of the task
   - online tracking and monitoring the status of logical components
   - full administration
   - for any task and solution the systems should be scalable and have the ability to be clustered
   - compatibility of programs and systems
   - worldwide availability as well as direct and permanent access to the system
   - full security of the company data and information
   - automatic creation of documentation
   - real time systems and applications
   - intelligent solutions with human like capabilities
   - flexible attributes, adaptive to new changes and extensions
   - self learning applications
   - merge of hardware and software

2. **- cost reducing factors, such as:**
   - outsourcing
   - less administration
   - less production problems
   - less training
   - less personnel
   - less resources

The whole process, starting with the customer requirements and task definition, solution development and implementation and ending with the distribution, maintenance and production of the final application, is altered by the reduced possibilities of the hardware and software. There are always substantial differences between the customer needs and the final application. Due to the numerous persons involved in the development process, persons from different areas with different interests, each of them specialized in only one domain of activity, the final solution never corresponds to the initial requirements.

Short description of the new concept

The new concept is a new point of view in the analysis and the development of computer aided solutions.

It enables a simulation of the real world and includes the following features:
- **three dimensional space**
- **time flow**
- **real objects**

It also contains all the missing factors listed above, such as parallel processing, workflow and artificial intelligence as well as all the software features described in the general style guidelines for software ergonomics.

Nevertheless, *the new concept and its software implementation* ***requires another way of thinking*** *in order to describe and analyze the desired tasks and further to design, implement, distribute, maintain and use applications.*

The complexity of the new concept requires a detailed description at all levels and from different points of view in order to make it accessible and understandable. Therefore the content of the concept is divided into six major areas as follows:

1. The entry point
> **Book One: "The actual problems in software development"**
> The first book analyses the actual state of software development from top to bottom beginning with the human way of thinking and ending with the implemented software application.

2. The basis of the theory
> **Book Two: "The solutions"**
> The second book describes the new concept by offering solutions to the problems described in book one.

3. The possibilities
> **Book Three: "The tasks"**
> The third book describes the application areas and how the corresponding tasks can be solved with the concept.

4. The implementation of the theory in real software
> **Book Four: "The software package"**
> The fourth book contains a list as well as a detailed description of all programs needed to implement the concept.

5. The first application
> **Book Five: "The first application: artificial intelligence"**
> The fifth book consists in describing the simulation of a biological brain containing different brain structures, starting with the theoretical basis and ending with the final product.

6. The corresponding computer
> **Book Six: "The computer architecture"**
> The sixth book describes the needed computer hardware and its operating system as well as the hardware of the artificial intelligence.

The new concept of represents a breakthrough in the development of computer aided solutions. The merge between hardware and software is an absolute requirement.

Paper Two. Description of the new concept

From the collection
„Men and machines“

by
Walter Crismareanu

Table of content

Legend for used fonts

Typestyle

standard	- fluent text
CAPITAL LETTERS	- ACCENTUATION
bold	**- foreground**
italic	*- statement*
""	- quotation

Font color

black	- fluent text
red	- problem/error
green	- success
blue	- milestone

The concept

The theory

The new concept and its software implementation ***requires another way of thinking*** in order to describe and analyze the desired tasks and further to design, implement, distribute, maintain and use applications. Why is there a new point of view needed?

Well, the most frequently problems concerning the actual concepts start with the questions:

1. ***"What is an object?"***
2. ***"How can an object be represented in a computer?"***
3. ***"What actions and reactions should an object have?"***

Unfortunately, these three questions are answered differently in every concept.

The new concept has a new definition regarding objects. Each object is regarded as a network of basic units. The basic unit is used to create compound objects of a higher organization. The basic unit and the objects are components. The ***basic unit*** requires the following ***features***:

1. ***a space***, in order to exist
2. ***a time flow***, needed to act and react independently with other objects in a space
3. ***a behavior***, how and when should this object act and react

Let us take for example two objects from the real world:

   a. *a stone*
   b. *a living organism*

If we regard these two objects from the point of view of the new concept then we have the following object definitions:

   a. ***a stone***
   - ***is a compound object, namely a network of atoms, the atom is the basic unit***
   - each atom takes a certain place in space and is acting and reacting with other objects during the time flow by using an own behavior
   - subsequently the entire stone takes a certain place in space, the sum of all its atoms, and has a compound behavior, the interaction of all its atoms
   b. ***a living organism***
   - ***is a compound object, namely a network of cells, the cell is the basic unit***
   - each cell takes a certain place in space and is acting and reacting with other objects during the time flow by using an own behavior
   - subsequently the entire living organism takes a certain place in space, the sum of all its basic units, and has a compound behavior, the interaction of all its basic units

The implementation

The software package enables the following features:

1. ***a space***, containing all the basic units
2. ***a time flow***, for all basic units contained in the space
3. ***a standard definition for basic units***, which are used to create objects of a higher organization

The basic units represent the crucial point in the analysis of tasks and further in the development of applications. The principle is:

"Many small things, which react permanently with each other in a space build together a greater object".

Description of the software package

The software package is divided into three major parts:
1. **The development environment**
   In the first step the components will be created with the development environment and stored as objects in the appropriate database.
2. **The run-time environment**
   In the second step the objects will be loaded from the database into the application, means into the space extract. Then the application will run by starting the time flow. The application will end on demand or after a certain period of time elapsed.
3. **The evaluation environment**
   In the third step the all the data recorded during run-time can be compared and evaluated.

Features of the run-time environment

1. *Real world features*
   a. the time flow can be hold on and continued at anytime and as often as required
   b. during the pause of time flow the objects inside the space extract can be stored as different versions in the database, even the complete space extract
   c. during the time flow the objects inside the space extract will act independently, means without any user interaction
   d. additional devices can be connected to the space extract, *depending on the application, merge of hardware and software*
   e. the additional devices represent the interaction between the real world and the objects contained in the space extract
2. *Information collecting features*
   a. Several internal cameras can be installed, they will deliver pictures from inside the space extract, without interacting with the objects inside
   b. Certain objects can be traced interactively by using the internal cameras
   c. The complete history, means all physical and logical events, can be recorded
   d. All additional type of data can be stored in a database, e.g. pictures, movies, etc.

Due to this features, the software package enables several simulations of the same task under different conditions, means as many scenarios as needed can be performed.

Application example

Simulation of a space extract containing different biological cells

In the first step the cells and the corresponding networks are created with the development environment and stored as objects in the database.
Before the time flow is started all objects, means cell networks, are loaded from the database into the space extract. The device drivers will also be loaded, they represent the connection between the space extract and the real world.
During the time flow the cells will react independently with each other by enabling new connections and/or disabling existing connections between themselves. The cell network will also react with the real world through the device drivers.

Additional devices

For this type of simulation some additional hardware devices are needed, such as video camera, microphones, loudspeakers, etc.

Paper Two. Description of the new concept

Application areas

The logical area

The solution for the logical area is an artificial intelligence with certain human like capabilities. Where could one need an artificial brain? There are two big fields in this area of application:

    a.   static, means machines, facilities of every kind
    b.   dynamic, e.g. moveable machines, transport vehicles and robots

Robots should do that work, which we humans categorize as:

    a.   **too exhausting**, because the physical border has been reached, e.g. hold, push, etc.
    b.   **too dangerous**, because the environment is not suitable for humans, e.g. toxic, contagious, contaminated, vacuum, outer space, etc.
    c.   **too annoying**, because the psychological and emotional requirements are too high, e.g. routine, stress, etc.

Until now men used facilities, machines and vehicles directly. The most important of them are more or less computerized. In future with the help of the new concept there will be a computer integrated in each of them, one with human-like intelligence like video and speech processing.

Applications in the context of the new concept

The principle as a task description and solution

The principle is: *"Many small things, which react permanently with each other in a space build together a greater object".* How can one imagine something like this? Hereby house as an example.

A house is for all of us an object. At the same time it is also a group of bricks put together in a certain way and of course they react with each other. If we also want to make a financial estimation for building the house, then the principle becomes very clear: it is better to multiply the price of a brick with the amount of bricks needed instead of guessing a number for the whole building, means „*Bottom-up* instead of *top-down*".

Aristotle meant a long time ago: *"The whole thing is more than the sum of its parts".*

The number of bricks for a simulation

For this type of application, something becomes very clear: *the number of used bricks*. Let's take some numbers and the brain as an example.

The human brain consists of up to 100 billion neurons, no one knows the exact number. Each neuron has connections with other neurons. How many? Well, *at birth each single neuron has already 5.000 ! connections with other neurons,. During our lifetime this number will increase at about 20.000 ! connections for each of them*. This means also the following:

    a.   during the nine months of pregnancy the average number of creating new connections is about 2 millions per second
    b.   during our lifetime the average number is about 50.000 per second

All this needs a huge memory and the appropriate execution speed. We should not forget the fact, that all this has to be processed simultaneously, in parallel and coordinated. And of course every part must be connected with each other during all this time.

Book One. The actual problems in software development

- extract -

From the collection
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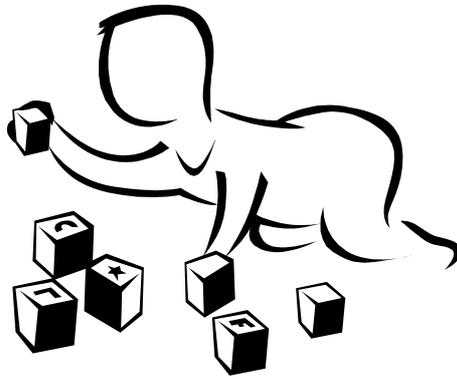
Part I. The man

Chapter 1. The vicious circle: see -> imagine -> represent

1.2. The summary

I see something and the rest, which I can not see, I am forced to imagine; but I can not imagine everything even if I use some „tricks"; but what I can imagine, I can not always represent; and what I can not represent, I can not see.

1.3. The conclusion

1.3.1. The facts

The way of natural visual perception in our brain is useful in our everyday life, but it has its border, when I want to represent three-dimensional objects in a two-dimensional environment, e.g. a cube on a sheet of paper. The problem is the third dimension, which builds the space component, because it is covered by the first two dimensions or it can not be represented; and that's why we are always forced to imagine it, even if it is not always or only partially possible. For this reason our imagination is preferably limited to the surface and the interior is replaced by the behavior towards us. Although we exist and also percept three-dimensionally, the plain stamps our way of thinking, a two-dimensional application of the space, too much used in our everyday life. So, our way of thinking is usually two-dimensional, one for the surface and the second for the behavior. The connection between these two dimensions of thinking is established through our personal global impression. These two dimensions of thinking have only a few things in common with the reality of the three-dimensional space and a lot of differences.

1.3.2. The goals

In order to break this vicious circle, we need a new way of representation, which should allow us, to "see" the interior of an object.

Chapter 2. The used methods

2.2. The summary

Isolated, static, unilateral, approximately and relative dominate our everyday life. It is very difficult always to think, that what we see is only a part of reality and only one side of it. The big number of seen objects force us to estimate, because other wise it takes too much time and effort to research everything very precisely. Our actual needs and interests, which always change, decide the point of view.

2.3. The conclusion

2.3.1. The facts

The methods in actual use represent a big limitation for a further development. We can refine some details of the elements, but we can not expect revolutionary knowledge and the following new developments.

2.3.2. The goals

We urgent need a new method, which allows us, to research each object of the reality. The new method should not exclude the actual methods, it should integrate them and make a parallel use possible.

Chapter 3. What is an object?

3.2. The summary

I see something and say, "This is an object". In order to describe it, I need a point of view and the connected knowledge. Attributes and behavior are put together in groups. If there is not sufficient information, then we estimate. Our assumptions are treated as the truth. So, an object can be a lot of things, but a precise definition we can not give.

3.3. The conclusion

3.3.1. The facts

The limitation to describe an object, often from a global point of view, makes it easy to react with different objects, on the other side, this fact makes us very difficult to extend our imagination and our knowledge. In everyday life we usually think only on our actual needs, which are concentrated to a limited number of behavior patterns. The obvious attribute, which we believe to recognize of an object, is described as our global impression. As a matter of fact the object is reduced to exactly this only one feature, even downgraded, everything else is almost not important. In other words we ignore everything else.

3.3.2. The goals

A new point of view regarding the definition of objects would surely help us very much. Therefore we need a new principle, which reveals a logical connection between all objects, also a corresponding visual representation of this new connection.

Chapter 4. Where remains the union of all imaginations?

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4.2. The summary

We get our knowledge from others by learning. We extend our imagination by examples. Own knowledge and imagination we built by our experiences. The tools which are at our disposal are much to difficult. The concepts for representation are defective. Everything happens in our head. We have reached the limits of our imagination.

4.3. The conclusion

4.3.1. The facts

The knowledge and imagination, which we have about reality, do not fit, because every domain has its own environment and rules. The human being is for all of us always in the middle of happenings. This selfish behavior does not allow us to create a integrated basis for our imagination. As long as we do not have a integrated environment for all domains of knowledge, as long we will remain in darkness.

4.3.2. The goals

With the help of new "logical" tools, i.e. a new representation and a new method of research as well as a new point of view regarding objects, we should be able to achieve an integration of our imagination, even if our good old "picture of the world" will change in this case.

Part II. The machine

Chapter 5. The hardware: What is a computer and what is it able to do?

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5.1.7. The functionality

5.2. The summary

A computer is a machine, which was built after our "poor" imagination concerning the behavior to other objects. The computer is not a person, even if we get this impression. A computer executes only one command, but because "he" is so quick, we have the "feeling" of parallel execution. A computer "does" nothing alone, "he" expects our reaction. In this case, an execution of simulated "reaction" is triggered, which means for us "he is working very much". The use of computers for different domains means for us "he can do a lot". With the help of our imagination, we believe, when we see the representations on the screen, to understand "what and how he thinks and works".

5.3. The conclusion

5.3.1. The facts

The computer does only that what we want. A computer is a machine, which can be very helpful when we control it carefully and properly and at the same time use it for a very well defined purpose of a very limited topic. The disadvantage is on the hand: the computer itself is, without the human input and without our "big" power of imagination, more or less useless.

5.3.2. The goals

A new computer with a "human" way of thinking would give us a huge advantage.

Part III. The interaction between man and machine

Chapter 6. The software: What and how can you represent in a computer?

6.2. The summary

The power of imagination and agreements of all kinds allows us with big effort to use the machine called computer. The agreement: this is what we want to do, this is the way work will be ordered in execution is the basis of our everyday life, which we transfer on the computer. Hereby we regard the process as a tool and all processes as a way to work, in this case also called operating system.

6.3. The conclusion

6.3.1. The facts

The different ways of thinking how to administrate a machine, makes it difficult to us to work with a computer. The real problem, the computer, is transferred on the operating system.

6.3.2. The goals

A computer that integrates all our imagination would need, "theoretically", a single operating system.

Chapter 7. The theory: why are concepts defective?

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7.2. The summary

Each concept represents only a small part of our imagination. There is neither a space environment nor a time flow for all the objects we want to represent. The plane as an application dominates also the concept. An equivalence of objects from reality are represented in a computer only "approximately", because the technical implementation is always put in the foreground. This is the reason why the runtime environment is not a proper one.

7.3. The conclusion

7.3.1. The facts

Our imagination is always relative, this means we want to represent only a part and only the elements and connections which interests us in this very moment, everything else is not brought to mind. An environment for our imagination does not exist, how good can be a concept in this case?

7.3.2. The goals

All new concepts should have an environment, which contains space and time. In this case all objects from reality will have an equivalent in the computer.

Chapter 8. The tools: with few ways to the big success

8.1. The analysis of the problem
8.1.1. The object tool
8.1.1.1. What is a tool?
8.1.1.2. What are tools for?
8.1.2. Creating components
8.1.2.1. The pictures
8.1.2.2. The behavior
8.1.2.3. The documentation
8.1.3. The translators
8.1.3.1. The components
8.1.3.2. The whole product
8.1.4. The test
8.1.4.1. Of each component
8.1.4.2. Of the whole product
8.1.5. The assembly
8.1.5.1. Of each component
8.1.5.2. Of the whole product

8.2. The summary

The real purpose of a tool is rarely used in software development. The actual programming languages where originally designed for "old times", the mainframe. In order to use such tools, a lot of knowledge and a lot of imagination is needed.

8.3. The conclusion

8.3.1. The facts

There is no connection between the concept and the implementation to the actual programming languages. The tools used are not helpful.

8.3.2. The goals

"Ideal" tools, which can be used without big effort in a lot of situations, would give every person the possibility of programming.

Chapter 9. The development: from imagination to representation

9.1. The analysis of the problem

9.1.1. The process

9.1.1.1. The requests

9.1.1.2. The conditions

9.1.1.3. The specialized basis

9.1.1.4. The computer basis

9.1.1.5. The implementation

9.1.1.6. Going in production

9.1.2. The involved persons

9.1.2.1. The customer

9.1.2.2. The producer

9.1.3. The work

9.1.3.1. The organization

9.1.3.2. The distribution

9.1.3.3. The pattern

9.1.3.4. The acceptance

9.1.4. The interests

9.1.4.1. The money

9.1.4.2. The time

9.1.4.3. The resources

9.1.4.4. The persons

9.1.4.5. The knowledge

9.2. The summary

The whole flow of software development in order to create new products is mostly reduced to the wishes of the customer, if he even exists. The differences between the technical side and the computer side are so big, that very often this connection is missing. The economic factor dominates the process of development, this is a reason for customers to use the so-called "standard software products".

9.3. The conclusion

9.3.1. The facts

The development is a long and difficult process with an open end, because there are very different and partially contradictory imaginations and interests. The integrating element is missing.

9.3.2. The goals

A "common" language for all involved persons could reduce and accelerate the development process.

Chapter 10. The products: the big illusion of the imagination

10.1. The analysis of the problem
10.1.1. The platform
10.1.1.1. The hardware
10.1.1.2. The software
10.1.2. The technical data
10.1.2.1. The volume of memory
10.1.2.2. The speed of execution
10.1.2.3. The protocols
10.1.3. The overview of the product
10.1.3.1. The structure
10.1.3.2. The representation
10.1.3.3. Modeling the tasks
10.1.3.4. The help assistance
10.1.3.5. The interfaces
10.1.3.6. The diagnosis system
10.1.3.7. The history
10.1.3.8. The message system
10.1.3.9. The administration
10.1.3.10. The further developments
10.1.3.11. The reuse
10.1.3.12. The workflow
10.1.4. The functionality
10.1.4.1. The handling
10.1.4.2. The automation
10.1.5. The documentation
10.1.5.1. The product presentation
10.1.5.2. For the users
10.1.5.3. For the trainers
10.1.5.4. For the experts
10.1.5.5. For the administrators
10.1.5.6. For the developers
10.1.6. The support
10.1.6.1. The introduction
10.1.6.2. The courses
10.1.6.3. The support
10.1.7. The result
10.1.7.1. The regulations
10.1.7.2. The evaluation
10.1.7.3. The use

10.2. The summary

The introduction, the administration and the support of a product take too much time and effort. The goods and needs as well as the integration of the product in our everyday work is very difficult, because every user has its own imagination about what and especially how a program should "work".

10.3. The conclusion

10.3.1. The facts

The product is to 99 percent that what we can not see and the rest of 1 percent is that what we can see on the screen. There are too many factors, which take influence, and this is the main reason why there are only a few possibilities of using a product. What we know is mostly our imagination about "something" in the computer. We are glad, if the product partially "runs" and we can "transfer" some daily work to the computer.

10.3.2. The goals

A product "without secrets" and without difficulties during the introduction and learning process is the declared purpose.