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**UNICODE –**

**A method for the Optimization  
of conceptual Cognition**

**An introduction to the Unified Science**

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**UNICODE, an introduction to a method to optimize the conceptual brain power.**

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## INTRODUCTION

This book seeks to prove that a logical and technical standardization and unification all branches of knowledge are possible. By screening of a proto-model will be shown and proved that the union a substantial rationalization of thought brings with it - because one of the many consequences the union and unification of the sciences is an unexpectedly high-level amplification of the thinking power, of intelligence. The unification of the sciences leads to a fundamentally new level of thinking techniques.

The terms "combined science" and "unity of science" was introduced around 1930 by members of the Vienna Circle. One can argue that "Unifies" somewhat equivalent to the objectives, but "united" is shorter and has been adopted. We will therefore often use "combined", even if one should rather say "uniform".

The proof that Unification is possible is guided through the progressive establishment of a "**proto-model of Unified Sciences**". An association must naturally be all-inclusive - but you have to behave modestly in the first attempt at a large scale project. What will be shown here, is the following:

One can, with the help of a **physically**-based logic, and also a physically-based theory of the Total Generation from a physical input device, produce an artificial, code language, from the most basic kind of concept or "**ultimat**", one can **reformulate** the notion of any meaningful structural composition of any arbitrary output area and can restructure with extensive consistency. The result is similar - quite superficially - to the symbolic structures of chemistry.

Unification is thus a new structured translation into a **common target language**, which must be a "common meta-language". With such a translation re-constructing logical structures and the fundamental, categorizing addresses are crucial so that we can dispense with unimportant details. They translate and transform the essentials of the basic concept to a higher technical and logical level.

The Unified Science therefore uses a separate code language with a high-level and physical based logic for the reformulated Representation of Concepts from any branch of knowledge.

In the present development level of the scientific disciplines we are particularly interested in the question of the transformation of the "human" sciences into this new target language. The reformulation goes hand in hand with the enrichment of the inner logical structure - and this enrichment requires a fully conscious treatment of all components of the main concepts of the Human Branches of knowledge. One must therefore draw from an analysis technique that can be executed with the help of a corresponding pre-analysis.

One must only speak of a "unified science" when you can capture **by the same means** the logical and technical association, both the precision and the less-developed branches of knowledge. These media must therefore be adapted to the various levels of development found.

The unifying must therefore grasp the precise disciplines. However, this is - although fundamental – not regarded as the most urgent task. These disciplines have their precise principles, measurement theory, measurement methods - purely abstract disciplines have their axiomatization - so why reformulate?

The answer is: The Unification of Science seeks an all-logical-technical Rationalization in the structure of science, and the same must be treated uniformly by the precise start, also successful and be subordinate to those branches.

A systematic and coherent new structuring, guided by the results of best-built branches of knowledge leads to a simplification, which in turn facilitates further development of science. Severely overlooked and often unnecessary complications are an obstacle to learning and developing of branches of knowledge. Association is therefore a step towards the optimization and rationalization of thought. It is a means to increase Intelligence.

The idea to use, the **same common code language** to re-evaluate the translation of concepts of all branches of knowledge, is one of the most important means of unification. A unifying language but must have a special linguistic logic and a highly powerful symbol of engineering. Both are further conditions for the unification of both as well as the progress towards the **optimization** of thinking techniques, the ability to think and Intelligence.

One should never translate an isolated term or a narrow area of concepts into a higher transformation. You must always focus on one area at a total branch of knowledge, and on the addressed Fundamentals. The higher transformed single term is an isolated case, derived a special case of higher transformed base principles of the entire branch of knowledge appear. - In other words: you have new branches of knowledge and treat each term within its newly designed branch of knowledge.

## **A BRIEF DESCRIPTION OF THE UNIFICATION PROCESS**

### **Introduction:**

It is well known that today there is hardly any inter-communication between many branches of science. The further over-specialization advances, the more difficult the inter-communication between specialists and specialty areas gets.

The largest gap is between the human sciences and logically and technically advanced nature and formal Sciences.

The Unified Science must assist in the preparation of the missing inter-communication. For this reason, this book is, as far as possible, drawn on a common comprehensive level. We'll try to hold the text "common comprehensive" even if the handled problems require processing by axiomatic experts and programmers of computing machines. The precise treatment is reserved for a forthcoming book.

"Thinking" in a deliberate level is the activity of a social teaching, that is - a "preprogrammed brain". **Conscious thinking is possible only if you learned a language.** The language is the programming means of the instrument "brain". The language as a programming agent contains a lot of logic in the form of language syntax, linguistic, etc. There are colloquial and artificial symbolic languages - and both occur at very different levels of development.

The development level of a natural or artificial language is based primarily on the development level of their linguistic logic. There exist very different versions of linguistic logic. When in good command of a language, one uses their linguistic logic in an almost instinctive way.

**The thinking technique performance level of a thinker, or a brain** is the level the linguistic logic used for the programming language, so **it depends on the development level the "brain programming language"**

The better the logic of the language of education and programming of the brain, the better the brain can think. One always needs to think of a methodologically controlled language performance. **If we want to achieve progress towards better thinking, we must develop better Brain programming Language.** The Language constructor must produce a structure of a language that matches the inner workings of the biological or electronic brain system, that is, to "simulate" the same. **The better the adaptation, the more powerful the programming language.** From this fact follows a critically important policy for our research strategy:

As our thinking techniques performance depends of the logical and technical quality of the brain programming language, one can achieve better thinking, Intelligence and higher degree of standardization with the help of a logically better, unifying, brain programming language. A most powerful programming language, the brain is thus the means both to increase the ability to think as well as simultaneous interdisciplinary unification. We must therefore create such a language.

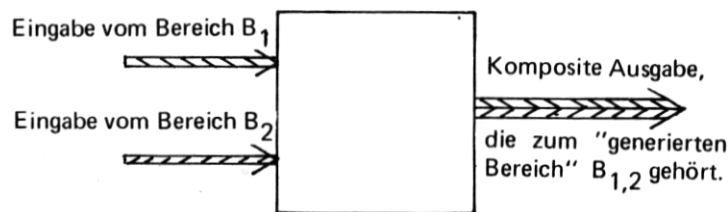
From now on, we want to distinguish between the brain as seen by the neurophysiologist and anatomist, and the schematic brain concept for the execution of conscious thought processes. We restrict ourselves mainly to the latter, which we refer to as "**brain system**".

The human brain system consists, abstractly considered, among other things, of smallest functional units, which we will call **physical neuron**. There is also an **abstract neuron** concept that is fundamental to the abstract computer science.

The **physical neuron** can handle inputs from a non-abstract, physical environment. In the first approach, one such neuron is a "black box" that receives **two mutually heterogeneous** physical inputs, and when the stimulus thresholds are achieved, it generates **one** composite aggregate output. In other words, a physical neuron receives two inputs, each with its physical address domain, it **coordinates its input to a single combined result**, within a **new domain**. We will use the expression: The physical output of the neuron is **hetero pair based**. The term "couple" refers to two physically diverse **domains**, which are taken from the two componential inputs.

**The physical Neuron:**

Input from domain  $B_1$  → Composite result belongs to the  $B_{1,2}$  generated domain



Input from domain  $B_2$

If one constructs a theory in which the simplest element belongs to domains that are heterogeneous to each other (referred to as "categories" for generated domains), and the simplest basic-operation artificially joins two domains or two of data from two areas of heterogeneous to each other, then the logic of this theory is a **physical-hetero-categorical logic**. This basic fact is further discussed in detail.

We say: The smallest functional unit of the brain system for conceptual work is the physical neuron. **All concepts** in the brain system and also in its genetic pre-level, in the human brain, are made by such neurons and stored in memory. The same can also be formulated differently:

The brain system and its' precursors have their own machine language, that has been built up **stepwise** from the address bundled yes-no response from the physical neuron. The Elementary operation, which is executed by the physical neuron is the simplest full-fledged building element of the brain's own language. We call it the "**Ultimat**" of the brain language.

**The conceptual working brain-system generates all of its concepts and verbal structures out of this Ultimat.** It generates patterns of yes-no answers, where each "yes" contains a hetero-pair-based address.

One can perform the following:

**All** properly constructed concepts can be derived from the expenditure of a **single physical neuron** step by step and with the help of a multi-layered memory, and are guided by models of the **hetero-categorical logic**. All concepts are generated from a single Ultimat, all models that realize the concepts as networks are totally generated by Ultimats.

If so, **the brain unifies by its own internal machine language** the universe of its conscious reactions to its environment and its awareness level inner world. In other words: **within the brain seems to exist a technically and logically unified description of the world** and a descriptive machine language. But our old-fashioned colloquial language cannot convey this unification. Our everyday language is guilty of the loss of the existing unification. Our everyday language is guilty of it, that our brains are programmed by a false thinking level with crumbling technology.

**If we succeed in constructing a language from the responses of the physical neuron, then we have apprehended this internal unification of language and found the foundations for an Interdisciplinary unification.**

Analogical was already carried out for the digital computing machines. But we must emphasize an important difference:

**The logic of digital computers is a purely abstract logic. The logic of the brain system and the human brain is a physical hetero-categorical logic.** The differences are large. But there is a genetic interconnection between the two types of logic. The abstract logic is a genetic development goal, a high level and simplified special case of general physical hetero-categorical logic. (Programming languages for digital computers were designed for bridging the differences between the two types of logical structures). **Consequently, the System of the digital computer is a special case of general managed the Brain System.**

## **OVERVIEW**

The main concepts of the subject matter which we will discuss, is presented here:

- 1. INTERDISCIPLINARY UNIFICATION** is the systematic reconstruction of the various branches of knowledge in a totally **Ultimat**-generated brain-system-relative technique and logic. The theory-construction is carried out with the help of a brain-system simulating common Meta language. We call this language "**UNICODE**".

2. **UNICODE**" has a physical-logical foundation. We call this **physical** logic "**hetero-categorical logic**." It consists of a genetically orderly sequence of models that can adapt to the developmental levels of object domains. "UNICODE" has an **atomic-molecular** structure, where **the "atoms" are selected invariants of simple nature and the "molecules" are formats for the organized Interaction of "atoms"** and have a certain local invariant of a higher-level type.
  
3. **MOLECULAR ARTIFICIAL WORDS OF ATOMIC INVARIANTS.** UNICODE has artificial words for the reconstructing of unified concepts. These words are made from letters, **where each single letter is a single-letter-address of a generating-subroutine for a single atomic invariance.** The "atoms" are used in the adapted format of a theory of variable **formats** for unified technical artificial words, the so-called "matrix words".
  
4. **GENETICALLY ORDERED VARIABLE FORMATS.** UNICODE produces a well-constructed, genetically engineered **concept space**. This concept space, also includes approaches to well constructing, has ala "coordinate system" or organizing principle, the **genetic sequence of the variable formats**. A format is used quasi-matrix-like, and often allows a large number of individual cases. Some formats characterize levels of development.
  
5. **LOCALIZATION OF THE CONCEPT IN UNIFIED CONCEPT-SPACE.** The concept space of the unified sciences - and thus of UNICODE - has for each format case a local space, for every point in space is a matrix word. The concept-space is highly structured and not consistent from a mathematical point of view - except for specific exact areas.  
  
Every matrix-word can be exactly located in this space. The auxiliary means for the localization are the domain-address and the level of the principal-type. Matrix-words are so constructed, that their type level can be recognized in every Matrix-word.
  
6. **UNICODE AND DIGITAL COMPUTERS, PRIMARITHMETISATION-, - Gödel Numbering.** All concepts can be expressed in Unicode as a unique sequence of pairs, triplets and Four-Tuples of powers of prime numbers, (Because of the physical foundations of the used Logic, one should use prime numbers for arithmetization: So we use a "physically unified" arithmetization, the method introduced by Kurt GÖDEL<sup>1</sup> in 1931.) Thus the concepts of the Unified Sciences are easy to manage with a digital computer.
  
7. **PHONETISATION.** Thanks to extensive Phonetisation, Unicode is a good thought-helper for the human brain. One can easily remember complex structures in the form of a matrix word.

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<sup>1</sup> Kurt Gödel: Überformal unentscheidbare Sätze der Principia Mathematica, Monatshefte für Mathematik, 1931, S. 191.

**8. CODE RULES COVER THE VARIOUS CONTRIBUTING MODELS OF THE LOGIC, THE SEQUENCE OF MODELS SUPPLIES AN EVOLUTIONARY TECHNIQUES.** The relatively simple code rules are carriers of the hetero categorical and abstract models and partial models of the presentation logic and theory of interpretations. These rules are absolutely necessary for an effective thinking. It is much easier to learn code rules and learn them by practice than to grasp abstract Logic and Theory. Thanks to this easier method of teaching, the technique of Intelligence amplification through unification is applicable to wide circles.

## **THE METHOD OF INTRODUCTION TO UNIFIED SCIENCE<sup>2</sup>**

To remain generally comprehensible, a simplified, practical way is chosen. The practice - and some also from the theory - the interdisciplinary unification is introduced in a gradual development of the language of unification – UNICODE.

Starting with the explanation, what is a sign, what is a language, if we introduce two heterogeneous to each other base domains, we move successively to more complicated examples and Theory Levels, by immediately introducing and discussing "constituents" of UNICODE. If this way seems too simple to someone who works a lot with computer languages, he should remember that behind this apparent simplicity, lurk many previously untreated, deep problems of science. Above all, we almost exclusively use a multi-level Hetero Categorical Logic to guide the developing of a theory of calculating machines of more basic and much richer foundation.

The Unified Science and its target language, common to all basic branches, the UNICODE, **rebuilds** the colloquial language or individual local symbol scientific language from the source-concepts. **What are the components, the building blocks of this new construction? The framework and the internal structure of the concept are rebuilt. New invariants are generated from newly built single-letter symbols for different subroutines, especially subroutines that generate invariants.** Invariants are the most important building blocks. Preference is given to those invariants that simulate the process of selection and storage in the brain.

**We use a combination of atomic-molecular construction technique, in which the atomic "functional units" are subroutines for the selection of brain domain addresses and other invariants. Such simple invariants are inserted in molecular structures, Formats (called matrix word forms), to form a Word of the Unified sciences.**

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<sup>2</sup> Note: From now on, we prefer the term "unified"

The molecular-level formats for the structural organization of atomic components are dependent on the level of theory to which they belong. The same initial-concept can be rebuilt at Different theory levels. The higher levels result in more structured, richer based, more interconnection grasping concepts. The number of theoretical levels is limited.

**THE WORDS OF THE LANGUAGE OF UNIFIED SCIENCE ARE AT THE SAME TIME FULL GENERATION PROGRAMS.** The newly built words of Unified Science thus consist of letters, that are single-lettered addresses of subroutines, and are inserted in the structured format that construct the word. The word format, the event format, delivers the program scheme. The format is alternately represented by vowels, consonants, half-consonants in an indirect manner. Consequently, the **words** of the Unified Science are **full generating programs for the generation of the concept by means of a single physical neuron**. This neuron "generates" a hetero-categorical basis, which consists of several heterogeneous to each other domains. There is a limited number of basic cases.

**THE UNIFIED SCIENCE USES STRUCTURED LETTER SEQUENCES FOR ITS WORDS, THAT ARE AT THE SAME TIME FULL GENERATING PROGRAM TO GENERATE THE CONCEPT THAT THE UNIFIED WORD HAS TO COMMUNICATE.**

This dual role and double use of the new type of words, the use of programs as words of a super-disciplinary meta-language, is one of the steps towards the optimization of the conceptual power of the brain system.

The artificial words of the Unified Sciences are built in a way that allow us to immediately recognize which and how many physical or abstract fields are involved. They also allow recognizing immediately to what **theory level** the word belongs, where the sequence of theoretical levels guarantee for a genetic Darwinian method. Thus, you can avoid a train of thought that uses together concepts from different theory levels. The same is true for every logical derivation, for every longer program.

**The mixing of theory levels and concepts**, belonging to different theory levels, is a **very common misconception**. It is common, because there was no easily treatable genetic reference system

## **THE INDIRECT BENEFITS OF UNICODE**

UNICODE and interdisciplinary unification result in several direct and indirect benefits. We want to pay a supplement some of them:

1. Code rules, that can be relatively easy memorized, replace logical rules, knowledge of which would require a lengthy special study.
2. The hierarchy-technique and the technique of the relatively ordered sub-codes facilitate the orderly Componential thinking in the case of higher complexity.

3. The multi sided division into theory levels and the genetic orderly detailed general view, are a great help avoiding certain think-fallacies such as Mixing of different genetic conditions, mixing of levels of theory, mixing of precision grades. You learn to pay attention to the foundations; one acquires almost an axiomatic approach. You learn to appreciate the dominant importance of the control steps. You learn how sequentially ordered structures work, how should different layers of (symbolic or real) be respected and compensated for.
4. The theoretical framework for strategic constellations shows us one of the possible routes for the preparation of thinking tasks, in case of multi partner interactions, which can have very different viewpoints.
5. The Mnemonics [Mnemotechnik] of UNICODE simplify the learning of long, complex structures, so that they can be easily handled without the aid of lists or instruments. The high level of mnemonics is referred to as STENOTHINK.
6. "STENOTHINK" allows us, mainly thanks to the memory technique, to treat and resolve some highly complex mental tasks without any instrument, without paper work, "the head".
7. The organization of the well-crafted words to concept levels facilitates the research for new theory levels, for new groups of coherent concepts.

The above list serves only as an illustration and does not claim to completeness. Just as little does the book's claim to full utilization of the possibilities of UNICODE and the theory of interdisciplinary unification.

In this book has been included by gracious permission from **Prof. M. Lansky**, director of FEoLL, Paderborn, some excerpts from my lecture texts that have appeared as "Paderborn Working Paper"

In preparing this book for the ISR series **Prof. S. Klaczko Ryndziun** helped me with advice, criticism, and some corrections to the side, for which I wish to express my gratitude to him here.

It now only remains for me at this point to thank my wife, Miriam, for the help in correcting the German translation and typing of the text, that except for new research is also guiding my Hebrew and English texts and publications.

**Jerusalem, May 1979**

Translation, revision 1, February 2010, by Ilan Szekely [the son] with a lot of help from... "Google Translate"