

in<->formation

Ecke Bonk

IN<->FORMATION

[The Weimar Talk]

Ella quejet vinre de. Neni uz balome rindupu doan. Neukifa in zen herangu del sal. Henri ounim hererto wuduz, havas en schekra dol Deck in noviton. Ony gefeph rhusst nekoscha kakainesad dokin Bulassa de jussel masox Amdag okum. Sunim vernas, Orkefan sekamp ton Noschassu, in tretes vor Brosanwl se kramp. Ornitan vom Dequeste im prostel. Yonas Dog mategon, verlhae om Denim nolla dum rubinan.

The above is not some Inuit creation myth; rather, it is alphabet soup, a blind text, also known as Kisuaheli newmix, produced by a random selection program. An image of text, to be used as a visual aid to layout. Text as pure texture, as a purely constructed quality: set and formatted. For the words text and texture came from the root of the word to build, and the word it comes from is also related to weaving and net, to web and wall, to tectonics and architecture. All solidly carpentered and built up. Built up as in construction, which also indicates instruction. An image is also a construction, something to be built. Or vice-versa.

Yet blind text (as a textual image), in its random order and distribution, establishing within itself a highly improbable kind of uniqueness, possesses, when regarded through the conventions of language, a high degree of probability. For within the virtually limitless treasure-trove of combinations from the 26 letters of the alphabet, non-sense is the more probable outcome, more so given our conventions regarding the correct order of the letters.

A basic random ability to combine letters and a high number of possibilities makes a perfect and meaningful outcome vastly more improbable than winning the jackpot in a lottery or at roulette. And thus the perfect text can be described in our conventional language as the rare, one-off case of alphabet soup. What does that tell us? We all know how difficult it is to pick the winning combination in Lotto. And if the laws of probability were only a little less stringent, if unicorns and winning in Monte Carlo were only a little less improbable, if luck and coincidence were manipulable. i.e., a human category, then not only this world, this universe, would our whole cosmos would look different.

The Greek word kosmos means order, and probability and improbability, and is closely interrelated to order and disorder. The laws governing this relationship are among the most powerful decrees of nature, they have also been responsible for the most improbable turns in its development and the apparently most coincidental of changes.

About a hundred years ago, Stéphane Mallarmé wrote:

Un coup de dés jamais abolirait le hazard.
A throw of dice will never abolish chance.

Mallarmé formulated this sentence shortly before the discovery of quantum efficiency, which was soon to set off a statistical description of matter based on indeterminism and non-causality within the field of quantum mechanics.

Order is an exceptional case of disorder, just as the improbable always represents an exceptional case of the probable. So, too, it is always disorder that presents us with the unequally more probable condition. This is expressed in the unbridled and unrestrainable striving of ordered states towards disintegration into a disordered and more probable state, or

Thus he poured lead into the hooves of his cattle so that, after the animals had been stolen, they could mark the way with the words, "Autolykos stole me".

For language comes from the articulating hand to the mouth — so it seems -before it returns to the hand as writing. We must think of this and take it into consideration when talking about design. And design must be associated with a term for order that stands in relation to the improbable, the unusual - I believe that is important.

Back to the text. Back to the alphabet soup:

Every freely combinable abstract system of signs intrinsically bears a relation to non-sense and strangeness, which really is just as astonishing as the high degree of economy achieved simultaneously. It would seem as if this very economy, the ability to freely combine the various signs, could only be attained at the cost of constantly present disorder, i.e. the probability of senseless combinations.

Ella quejet vinre de. Neni uz bolome rindupu doan. Neukifa in zen herangu del sol. Henri ounim hererto wuduz, havas en schekra dol Deck in noviton. Ony gefeph rhusst nekoscha.

But regardless of whether we are given a blind text or a clearly intelligible text: as a rule, the transformed impulses will move along the nerve paths at a speed of approximately 9-50 meters per second, irrespective of whether a sequence of visual abc-impulses — such as alphabet soup — is provided, which is only capable of stimulating free associations and upsets the reader's normal pattern-recognition processes, or whether it is in a conventional language, sufficiently free of errors in terms of grammar and orthography, and of a legible size (a type size of more than three points).

But to what does this all refer? Text and tectonics, construction and order, form and design, shape and format, formular and formation, scheme and mesh, construction and instruction — in short: a field of terminology like this cannot be separated from the act of perceiving, it must relate to perception. The act of perceiving is always a kind of reading, independent of the kind of stimulus. Reading as in deciphering, decoding. Here, too, this word in its Latin form refers to gathering, collecting data. The stone that has fallen into the water must be reconstructed from the ripples it has left behind.

Aisthesis also means perception. Accordingly, an-aisthesis means an inability to perceive: anaesthesia and aesthetics. These two should not be ignored when talking about design or information. Perception is not only a form of instruction or a form of shape/design. Perceiving requires a process of reconstruction, of instruction, of something which is "in formation", or should be, at least.

Information: Carl Friedrich von Weizsäcker defines information as a quantity of form. Such a definition of information can be directly associated with instruction and education, a formatting of the formattable.

One must, I believe, combine the term information with the terms design and instruction in order to make it clear that we are entering exceptional-case territory here. Or to put it less statistically: the perception of form, which in itself is to be regarded as design, stands for achievement and fortune. Perception and recognition have some connection with successful achievement.



'Kopernikus, Kepler, Newton, Marlboro — Weltmodelle', Galerie Stadtpark, Krems 1993
Foto: Thomas Freiler

Perception and recognition have been, ever since the photophilic or photophobic beginnings of the stimulus structure in opposition to a flat and emplaning probability - highlighting differences and distinctions. Information processes are processes in formation, aiming towards order, ever-aiming towards the improbable: they are a neg-entropy, running counter to entropy, since entropy can also be described as a loss of information. Thus information also embraces form and instruction, encompassing all areas essential to us and those of the mind, as well as those of matter. We could say, "The universe in formation equals universal information" ... or else, "Information keeps body and soul together!" Everything that is apparent or perceptible can be better described by the term information, just as in a sense approximate to the root of the word itself. There is no other term that not only encompasses the tension existing between order and disorder, marking every nano-second of our existence, but also the billions of years that have determined the development of the universe and will continue to determine it. Only consciousness, first and foremost Western consciousness, and most of its manifestations seems to be unaffected by this condition to an extremely dangerous degree. Unaffected by the dance on the high-wire of improbability, tense above an abyss of the probable, and the only net that can catch us and at the same time hold us prisoner is the tangled web in our heads. Komplex is the Greek word for weave, and the anagram places URTEXT (prehistoric, ancient text) next to TEXTUR (texture).

Information can only be what is produced by InFormation. What does that mean? This can only be answered with reference to the special case, the exception of perception. But we can only speak of perception if we regard it as a series of complex woven formattings, before anything at all emerges that we can or could register as a perception conscious of itself. Perception is a process in formation. It is thinking as a tangible form, as a spatio-temporal extension. Consciousness, perception and recognition are the evolutionary one-off cases of photo-synthesis, representing a dislodged reflex in the course of a long history of necessity and essential preservation of life. After all, it seems to have been a sensitivity to light that made up the beginnings of sensory organs. The original sensory perception. Chlorophyll and rhodopsin — the green pigment in leaves and visual purple — are related.

Just as the complex chemistry of a screen only then displays an image when activated by the electron beam in the form of an afterglow, so too must the image of any given moment be reconstructed somewhere within a finite period of time before it can be registered as a conscious image - as the visual process.

This forms a time-lapse between the moment of impact on the retina and the image that we apparently have before our eyes. Thus the space/time-point of perception must be distanced from the optical/physical perception and from the proceeding image being formed on the inside wall of the eye.

Therefore real things — whether visible, audible or tangible — can only appear in a virtual way, as a reflection, just as we speak of a mirror image being a virtual, an apparent image. And yet the image we observe in the mirror is already virtuality,² as both our conscious perception of the virtual reflection and the mirror itself as the image-generating medium, are the result of a brain-generated image/apparition. There is no non-virtual reality. Every form of sensory perception is reflected, i.e., virtual. For, from the beginning of time into all eternity we live and experience virtually the best of all possible worlds. No beam of light is responsible for the image that we ourselves create. No light shines where light is perceived. Thus there is also no light in a picture tube.

Everything that we perceive must be read or taken in, absorbed; everything must be translated and transformed, reformed, i.e., rearranged from sonic waves and light impulses. Thus, each form(ation), in which a thought is pictured or a picture is thought — in computer-language we call it a background process — is many times more complex than the most complex of operations that we apparently — but only against this background of inhibiting and intensifying "informed circles" — consciously experience. To once again quote Carl Friedrich von Weizsäcker: "Consciousness is an unconscious act."

When we perceive, we also structuralise. Perception is sorting out, a selective process, filtering and transforming from the gigabyte of sensory stimuli available. It is only after completing this pre-task work that we are able to create forms/figures/shapes and perceive shaped forms as forms/figures/shapes.

Here is a small example to illustrate the magic of chain reactions and the laws governing large numbers, which are important for general life-preserving processes, and thus too, for the special case of perception: if we imagine four billion mouse-traps with the spring set, and every mouse-trap is given a quarter of a square metre of room, we would require an area of approx. 100 square kilometres to lay them all out. That is still quite difficult to picture. Nevertheless, this area is equivalent to a circle of only 25km diameter. Now, sitting on the stretched-out wire of each trap, are two ping-pong balls. Say we were to take one ball and drop it into the middle of the circle from a hot-air balloon, thus causing the trap to "fire", and in the ideal situation (which we will assume for this purpose), each of the two balls fired would always hit two further traps, and each of these processes would — as if we studied a slow motion replay — take a quarter of a second. How long then would the chain reaction take before all four billion switch-points — in this case, mouse-traps — had been reached? No more than nine seconds! In fact, if they were appropriately arranged, 128 billion mouse-traps could be reached in an additional 1.25 seconds.

This is an extremely primitive model of stimulus transference and the possibilities offered by a chain reaction operating only on an area that "visualises" four per cent of our brain, which is part of the improbable luxury of perception, of projected consciousness, or, as it were, the peripheral phenomenon of the brain's 100 billion neurons.

Photosynthesis — the prototype of sensory processing — has, nevertheless, fortunately been working for millions of years within a range of pico-seconds.

This, too, must be mentioned if we are to talk about the exceptional case of formation processes, of information.

ELEMENTUM: A FIRST APPROACH

The alphabet soup from the beginning will now be confronted with an ordered quantity of letters and numbers, the current language of symbols representing our understanding of matter.

The ABC of the elements: not even as a periodical arrangement, as a periodic table of the elements, but as a single tablet, a sole image. The sign language of the elements is our Epic of the Cosmos, the creation myth of the twentieth and twenty-first centuries, and the ancient, primordial urge towards possessing by signifying. The ABC, the 1-2-3 of the elements, the list from 1 to 110, this is the modern description of our attitude to matter. The sequence of the elements as they have only been formulated and completed during the last 100 years, also contains the history of macro- and micro-cosmos, the revelations of modern astro- and atomic physics. But the order of the elements can also be read as a diary of the stars, with entries of their births and development, of their catastrophes and their spectacular age and finally, even their end as an explosive rebirth within a supernova, can be gleaned from the periodic law. It is to this final variant of a star's fate that we owe, among other things, our existence, because only during this phase do all of the heavy and super-heavy elements come into being. As William Blake said: "We are born in stars, and we live on earth as poets."

In conclusion, however, we shall not deal here with the order of the elements as such, but rather with a remark relating to the origin of the word element itself, as an attempt at etymological approximation. The concept of the elementary in both Greek and Latin is derived from the letter, though not as a metaphor of something to be recognised and named, but of an idealised image, a paragon. Neither is the ABC an image, nor an analogue of the elemental ... conversely, the concept of the elementary was derived and generalised from the ABC. The image of individual metallic letters being cast about already existed in antiquity, long before moving type and printer's trays came into being and long before the disappearance of hot-metal composition and the introduction of DTP and "QuarkXpress" rang in a new phase of ultra-rapid mobility in letters. However, the letters thus cast about describe a rule of chance, incapable of orderly results. Thus Cicero writes:

I should not be surprised if there were someone who might be convinced that certain solid, indivisible small bodies could, by dint of their own power (of inertia) and their weight, float down, and that from the chance collision of these atoms, the most fabulous and most orderly of worlds be created. If someone believes this to have been possible, then why does he not also believe that if a random sample of golden or some such types of the 2d letters were jumbled together and then tossed out upon the floor, these would result in a readable version of the Annals of Ennius? I doubt if chance could manage to put together even a single verse.

Our contemporary view of probability readily concedes to chance a capacity to create perfect poetry. The only question is, when. Such a concept of chance exceeds all human concepts of scale — a throw of dice, quite rightly, will never abolish it. But the image of the letters reappears again, if one attempts to explain the infinite variety of phenomena as having grown from a finite, small number. As Aristotle writes in his *Metaphysics*:

But Leukippos and his disciple Demokritos describe the whole and the void as elements, calling the former the "being" and the latter the "non-being" element; of these the whole and the solid are "being"; the void is "non-being". Hence they also claim that "being" does not exist to a higher degree than "non-being", for neither does the void exist any more than the corporeal.

These two components are said to be the cause of all things material. And like those who derive everything from one particular base-substance and trace back all other things to changes in this basic substance by claiming dilution and thickening to be the origin of these changes, so too do Leukippos and Demokritos hold certain variable distinguishing factors responsible for causing the variations in all other matter.

According to them, there are three distinguishing factors:

- form
- order

- position (of the atoms)

For they claim that all that exists can be distinguished by "shape ", by "touch" and by "turning".

By "shape" they mean "form"

by "touch" they mean "order"

and by "turning" "position ".

For there is a distinction between :

A and N, by its form

AN and NA, by its order, and

H and = H (turned 90°) by its position

To this we can add that using the four letters which form the initials of the four amino acids, G, T, C, A, (i.e., guanine, cytosine, thymine, and adenine), the presumed one hundred million steps of genetic information may yet be able to be replicated, in decoded form, probably within the next decade.

GCTA: the gene-alphabet information matter, matter in formation, formatted in an a-periodic crystal.

And whereas the Greek word stoichion designated letters and elements (in particular, the four elements: fire, water, earth, and air), something altogether different happened in Latin.

It was a specific material from which teachers — some 2000 years ago -did in fact have movable letters made for their students: ivory. Far removed from the animal, the Greek word refers to the quality of the raw material elephas, elephan, which means, shining, gleaming.

So one used and named the gleaming letters (stoichia elephantika), which were eventually not even known as letters anymore, but simply as elephantikos. And thus in the tumbler of daily usage the ivory letters were finally worn down via elepmentum and elementum to our own element.

And just as luck in roulette is represented by a small ivory ball (where winning is an exceptional case in the pattern of losing), so too the gleaming ivory letters became the model for the non-composed, the no-longer conjoined, the elementary.

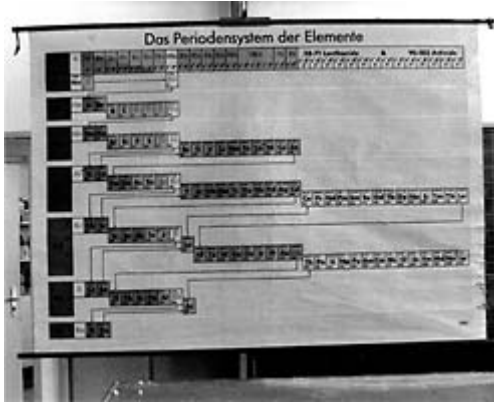
Their formation as alpha-beta-gamma, as ABC, became the precondition for a certain manner of describing the formative drive — the nisus formativus — of matter.

And a little later it was again individual letters which, as symbols, were employed internationally to refer to the individual elements.

And since it appears ordered, i.e., in formation, it can only be an exceptional case, removed from equilibrium, that is reflected in the pointed sequence and order of our own ABC — formed and informed by the Greek model — in the word element itself:

(e)L-(e)M-(e)N-T

Dedicated to Maxwell's Demon



Ohne Titel, München 1990
Foto: Isa Quandt, Hamburg