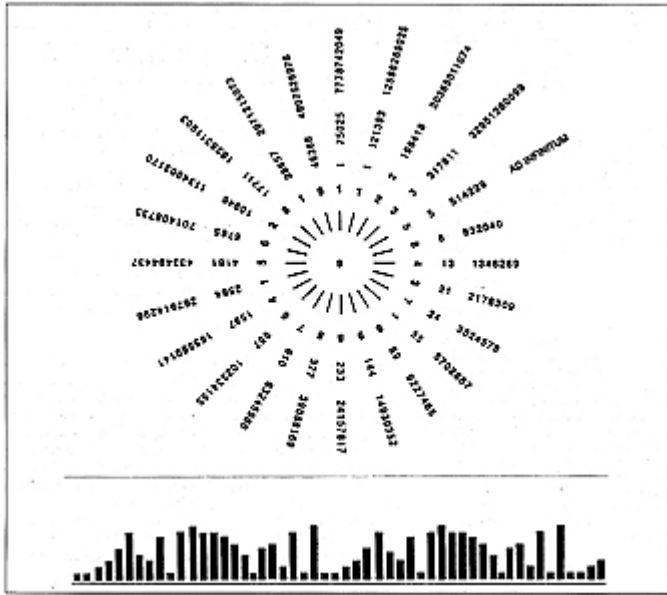


**MINDMUSIC**  
**SYNTHETIC MUSIC AND THE MUSIC OF SYNTHESIS**  
**Konrad Becker**



Sums of Digits of the Fibonacci Series

While the problem of body-and-mind is still hovering around unsolved, the mind-machine interface is already being worked at and the "simple relationship" of Man and the machine, the "user Interface" is leading deep into the "philosophical spaghetti" of our cognitive structures. It seems that while cognitive facts become harder and harder, the simultaneous softening (software) of our space-time data does not only lead to an amalgamation of nature and the liberal arts, but to the Universal Hodge-Podge (Hypermix).

The reflected perception of sounds in scales and music refers to the relation of mathematically defined (and electronically reproducible) structures and psycho-physical states feelings like "mood" and "relaxation". (The deduction of these terms and words, like "personare" — "to sound through" seems to point out a sonic quality of subjective structures.) Experimenting with resonance machines (instruments) is one of the oldest cultural activities and the importance of "meta-mathematical" structures in this context can be verified for most cultures. The Pythagorean experiments with the monochord about the transformation of sound experience into numbers (and the canon that followed) have not lost their fascination, and the fact that such immeasurable "things" like "personal mood"<sup>1</sup> are connected to numerically susceptible musical systems, gains new importance through the increasingly computer-controlled and technified music production.

"Music — a secret arithmetic practice of the soul"  
 (Leibnitz)

Is this a hint towards a "Philosophy beyond thinking" or a "Quantum theory" of psycho-physics? (Breakjandance?) The importance of the suggestive effects of socio-cultural environment in music seems to become clearer, firstly because only a few "hard" facts are known about the trans-cultural basis of psycho-physical effects of music beyond the knowledge that there is an influence on physical metabolism like breathing and pulse speed, while the effect of collective suggestions is obvious. (I got the power!)

Among the more widely known facts are EEG-research programs, that proved a resonance-like rapport of brain waves upon external optical or acoustic stimulation. The brain's own frequency tunes in with the frequency of the stimulus, an effect called "photic driving" or

"frequency following response". Some frequency spectrums and areas are associated to psycho-physical states (and Greek letters), but these measurements do not seem apt to really cover the complex wave activities of the brain, and they only offer a vague outline of a theory of psycho-physical music.

Already the situation of a continuous monotonous stimulation creates a phenomenon (void) related to the functional context of a monotonous stimulation and no stimulation at all. This (monotonous) stimulation corresponds to a long tradition of perception control (Mantra) and is known from the hypnoid effects of repetitive music. The "subjectivation" of music is seemingly connected to an "objectivation" and "dis-artefactization", behind the formulas and/or chaotic elements of which the composer practically disappears. Nevertheless, music is also a myth, the model of a Weltanschauung, and this context determines what we hear or rather perceive as the signal or music. (Accordingly, many variations of musical structures are to be found.) The importance of musical systems, though, is not only in their stabilizing, but rather in their transforming and de-limiting effects. The ecstatic fascination of a "dehumanized" musician as the "producer" of denaturalized sounds is an everpresent factor from the origins of shaman ritual music to contemporary shapes of popular music. Functional shapes of trance and dance music render visible certain trans-cultural elements, where not only the tone, but also the sound makes the music. By stressing the highest and lowest frequency pitches, a sound space is created through specific rhythmic patterns, within which effective interactions of spatial vibration patterns expand for instance as dissonances or beating, in the sense of Architectural Music. (Ritual buildings were originally built in relation to harmonical proportions, as a part of a numerically structures cosmogony, in which also the patterns of dance steps represented a link between the "cosmic" and the "profane" (e.g. a cooking recipe)).

Is the machine the ultimate chapel of the chymical marriage?

if so, which is the spirit in the machine? As an early example of the representation of a numeric structure on a resonance field-like level as a numerical system of a (mythological) planetary intelligence, we find (some) so-called "Magic Squares" that have a close resemblance with the resonance patterns of the "Chladni-figures". But also the planets' orbits determined by gravitational forces ("the love of the asters") were interpreted in analogous models of a "Music of Spheres" (Harmonices Mundi). Regardless of the aspect of universal patterns, the transcendence of patterns, the "de-programming" and the "deletion" or reactive conditioning are part of transformative music.

The term "brain-washing", unfortunately, has been subject to a negative interpretation. This is strange when considering the great social (and finally economical) importance of the "White Giant"<sup>2</sup> and his army of synthetical "detergents" in the fight for "immaculate conception" (whiter than white). If it is true that the reduction of many epidemic diseases (Black Death<sup>3</sup>) is mostly the outcome of an advance in hygienic measures, why then "deodorant" and not "brain-wash" when talking of a mental "rubbish problem"? If one wants to overcome the limits of our suggestive "realities", a "de-hypnotization" program would be the means of choice (wash and tumble dry). The symbol of immaculate acoustics is the White Noise (well known from radio and TV), the simultaneous chaotic superposition of all frequencies, and the hearing of "everything" and thus nothing at a time in the already mentioned context of "monotonous simulation" (constant vibration). And it is also on the basis of this subjective, oracular and "rustling" properties, that the noise-orientation of transformative music may be explained. "New Music" is (in first instance) but noise, and along the changes of cultural listening patterns one may observe, how the originally "senseless noise" slowly "changes" into sensitive signals and is finally accepted as "music" (in analogy to a cultural process in which "dissonant" intervals insert themselves into an enlarged notion of "harmony"). "New matters are the old ones' death", yea, but human listening patterns are well defined and deeply

imprinted (like the Grey Geese's ping-pong ball) after the breaking-up of the social "egg" (puberty) accompanied by hormonal developments and metabolic changes. (Which guarantees a constant audience to aging pop singers.) The temporal experience in music, the "timing" is determined by "Simultaneity" not only present in the simultaneity of polyphony, but expressed also in the periodic scaling of frequencies (e.g. octaves) and harmonics. Maybe, the results of the connectionistic model of parallel processing may throw some light upon the quality of the "simultaneous" inhuman information processing respectively in poly-rhythmic modulation of consciousness.

Regardless of the absolute relativation and of the lacking exactness of all scientific data, some constants keep coming up again and again. One of the oldest known structures is the Fibonacci series, (where each number is made from the sum of its two predecessors). This sequence has significant properties both for the behavior of population graphs, and the leaf development of plants (phylotaxis), but also for the human experience of proportion (e.g. in the "golden section").

Among the newer constants rank e.g. the Feigenbaum numbers from Chaos research.

But not only natural constants and their sub-elements offer themselves for operational definitions, but simply any "thinkable" proportion of numbers (the musician with the calculator in hand?). Is the paradox a musical oscillator? Are the conceptions of linear thinking overridden by matter, where the enlarged relational frame of "subjective science" would still make sense? ("Music on my Mind" — Dr. Franc H. Kiss.)

As such friendly terms as "charm", "flavor", "quark", and symmetry have crept into scientific terminology, why not a word like "sympathy" for phenomena of discrete resonance of subjective science?

Since the early 1980's, Monotonprodukt and the "Institut für wissenschaftliche Sensation" (Institute for Scientific Sensations) are working on the transposition of metamathematical structures, natural constants and resonance patterns in models of "bionic" psycho-active automat music. Publications, installations and long-term experiments include among others electro-acoustic representations of square roots, potences and periods, Pi-factors, Fibonacci sequences, Feigenbaum-Numbers, "Magic Squares" and others.

The electro-acoustic structures of "Mind Cinema" are among others related to the "discovery" of periodic sums in the Fibonacci series. (Cf. the Scientific Sensation figure.)

1 German "Stimmung" means both "mood" and "tuning"

2 The "White Giant" is a detergent trade mark used in Austria and Germany and has become quite popular as a metaphor

3 The Bubonic Plague