The Hans Kayser Website, The Science of Harmonics, The Sacred Science Institute Translation Society, Translations of the books of Hans Kayser from German to English by Joscelyn and Ariel Godwin

Harmonics as Symbolism

The third foundation on which akróasis is built is *Harmonics as symbolism*, or harmonic symbolism.

Relationship of the Harmonic Doctrine of Correspondences to Harmonic Symbolism

The difference between harmonic correspondence and harmonic symbolism lies predominantly in that for the series of correspondences, the emphasis is placed on the individual phenomena of correspondence (analogies), whereas symbolism returns to the prototype behind the correspondences.

Analogy

To recapitulate: an analogy is the agreement of significant indicators in two cases. An analogy exists, for example, between the gills of fish and the lungs of land animals. The organs are dissimilar, but their function, breathing, is the same: herein lies the analogy. Analogical conclusions have high significance in practical and scientific thought, although they can often lead to misjudgments. Harmonics also works with analogies, but always with the binding force of the harmonic theorem, thus a centering of the two analogous facts in certain forms of the psyche and nature. Fechner's Zend-Avesta, as we saw, predominantly uses analogies, such as that of the soul of the earth to the human soul. But this analogy, although beautiful and believed in by many, is completely nonbinding, since the tertium comparationis is missing, namely those forms which give rise to both earth soul and human soul. There are hundreds of analogies of purely geometric forms which are in accordance with plant forms; one could fill books with them. But there are just as many geometric forms to which no analogies exist in the plant kingdom. Where is the common law there? Such analogies have meaning only when I have found a reference point lying outside geometry and plants about which I have an inner certainty, and which I can test. To find this reference point in the domain of botany was the task of my book Harmonia Plantarum.

Parable

Matthew 13.10-11 reads: “Then the disciples came and said to him: Why do you speak to them in *parables*? And he answered them: To you it has been given to know the secrets of the kingdom of heaven, but to them it has not been given.” Here the parable is the clarification, the illustration of a religious truth by means of sensory narrative forms; thus it is not, in fact, an interpretation, but a comparison between spiritual fact and narrative representation.

Fables and Folktales

In the profane, the parable appears in fables and folktales; these too are poetic representations of mostly ethical truths in a narrative, historically understandable form. The element of uncertainty here lies not in possible false conclusions, but in an incomplete grasp of the parable or fable, which can still have great artistic value even if it is incomplete in this regard. The same goes for the parable concept in the visual arts: the *allegory*. For a deeply perceptive person, all of nature is a parable, whereby the akróatic background of this concept is expressed. Everything “speaks to us” if we can listen inwardly for this universal secret language.

Symbol

It is only a small step from parable to *symbol*, but a decisive one: the “eternal truth” that the parable paraphrases and makes into a story is concentrated and stabilized in the symbol via the image-concept. It is removed as far as possible from the sensory and presented in an abstraction which, like a highly sensitive detector, allows our psyche to receive direct messages from the spiritual world. To be sure, the psyche must be perceptive to this, and sadly this perceptiveness has been lost to us, with only a few exceptions, since the rise of the natural sciences.

Proclus

For example, in the Commentary on Book I of Euclid’s Elements, from the voluminous commentaries of the almost entirely forgotten Neoplatonist Proclus, there are deeply perceptive discussions of the concept of σχῆμα (= form) in relation to the mathematical symbol, making our modern handling of mathematical symbols look like a completely misguided in contrast. Nikolaus von Cusa also wrote of a concept of the primordial symbolism of mathematical signs in Vom Wissen des Nichtwissens:[1] “We tread this path of the ancients, we compete with them and say that we will avail ourselves of their completely dependable certainty due to mathematical symbols, since only through symbols do we have the possibility of attaining the divine.” Similar conditions apply for spiritual, religious, and mythological symbols.

Bachofen

However, we are not completely unaccustomed to the first, intuitive inner view of the symbol. In Bachofen’s *Gräbersymbolik der Alten*, we find the following beautiful passage: “Human language is too poor to clothe in words the wealth of presentiments that the exchange of death and life awakens, and those higher hopes that belong to the initiated. Only the symbol, and the mythos

connected with it, can satisfy this noble requirement. The symbol awakens presentiment: language can only explain. The symbol plucks all the strings of the human spirit simultaneously: language is always obliged to devote itself to a single thought. The symbol's roots reach into the most secret depths of the soul: language only touches the surface of understanding like a slight breath of wind. One is directed inward, the other outward. Only the symbol can connect the most varied things into a unified collective expression." Here, as in all Bachofen's works, the full resonance of the symbol concept is still thoroughly alive. The same goes for Creutzer's standard work, *Symbolik und Mythologie*, for a whole series of Romanticists, especially Novalis and Carus, and for the French Saint-Martin, as well as for Franz Baader. Ancient symbolism is also alive and well in most Masonic lodges; and the rediscovery of Bachofen by Klages is well known. In contrast, however, there is the entirely asymbolic position of all modern science. If, for example, one finds this psychoanalytic definition of "symbol" in a reference work: "Substitute for an idea intolerable to the consciousness, or behavior through a harmless expression,"[2] this might perhaps be useful for analysis; but with regard to a real symbol, such a definition is certainly not "harmless." And the important, currently widely read *Lehrbuch der Religionsgeschichte*, by Chantepie de le Saussaye,[3] reads: "The explanation of a myth should be nothing other than its history. The task is not to find a rational kernel from irrational stories, but to describe the origin and development of the myth." When we read in the same work,[4] on symbols: "The primary concern of man in religion is not a symbolic representation of his ideas and feelings, but instead the attainment of certain things which he believes he can obtain through his illustrative activity," it is no wonder that such a materialistic historicism explains that the old symbolists like Creutzer, etc., offer "only historical interest, not factual."[5] In the latest edition, this obdurate understanding has been corrected, but the overall character of Chantepie's textbook has not been changed by such revisions. In dealing with symbolism and mythology, if the interpretation and reference to spiritual backgrounds and inner psychic conditions are no longer placed first and foremost, then these domains will surely become barren wastelands of "irrational stories," which can only be put in acceptable historical order by philological mechanics. In every consideration of myth and symbol, the psyche must first open up, and only then the mechanics of intelligence, otherwise all understanding is relinquished. The fact that Creutzer, Bachofen, etc., were restricted by the limitations of their eras regarding research into historical factual material, just as we are restricted by the limits of our own era, does not affect the main issue: the grasp and understanding of the symbol itself. And in this regard, we still have plenty to learn from them today. Thus, in the harmonic symbol—I also use the terms "prototype" and "value-form" for this—we move from the dynamic-static interplay of correspondences into the domain of pure ideas. An example of a harmonic idea, prototype, or value-form is the harmonic trinity. In my *Grundriß eines Systems der harmonikalen Wertformen*, I made the first attempt to isolate harmonic ideas and prototypes and put them in order—admittedly a very incomplete work, which still needs many corrections and more research in the future, especially regarding the naming of the value-forms and their further construction.

The harmonic symbol must be authenticated through correspondences, and it is psychophysically anchored by the harmonic theorems, thus "scientifically" founded. In harmonics it is not hearing alone that takes the stage—although the auditory forms are the starting point of harmonic thought and study—but also seeing (diagrams, sound-images, optical forms); the sense of touch applies measure and number to the "scientifically precise" bases; and finally, thought is added, with its logical forms as a regulator.Since in harmonics we are advocating a new sensory theory, it should be discussed briefly in the next and final section.

§50. NUMBER SYMBOLISM

§50.1. Harmonic Derivation

This derivation is not necessary here, since the reader has been informed of the importance and significance of certain numbers, such as the senary, etc., at many places in his previous study of this text. Therefore, we will proceed immediately to ektypics, and refer to the harmonic origin of the numbers in question case by case

§50.2. Ektypics: the Harmonic Number

Whereas all number systems are built upon powers of a certain basal number, e.g. 10 in our decimal system, and thus follow purely arithmetical viewpoints, the harmonic number system is already psychophysically evaluated due to its evolution from the tone-number, and thus structured, formed, and shaped (§4a, §31a). Such shaping and evaluation consequently has its effect on the individual number groups and number progressions, indeed on the individual numbers themselves. For example, whereas the number 5 indicates in pure mathematical terms only "five times one," or the arithmetical quantity "five," etc., in harmonics 5 **e** or 5 **as** is also the major third, as well as the fifth frequency or wavelength. Here, then, a psychic value is added to the pure abstract concept of quantity. Psychic values, however, are not only in our heads, but also in the psyche, localized in perception, and precisely for this reason it will be possible to observe the great disreputable (although venerable and never completely lost) domain of "number mysticism," "number superstition," and in more objective terms, "number symbolism," from an adequate and above all accessible point of view: that of harmonics.

§50.3. Number Symbolism

All antipathy toward number mysticism, its convenient shelving among the superstitions, or at best its symbolic redemption, has for so long been meaningless and stuck in mere historicism that it is only handled purely intellectually, historically "critically," or "analytically." If we take only the numbers in themselves in their mathematic notation systems, then it is completely incomprehensible why certain numbers over millennia have been connected so tenaciously with certain images and ideas, or indeed why numbers were ever allowed and assigned meanings in themselves, be they extrasensory, symbolic, or whatever else.

The problem looks entirely different once we know that in our psyche itself, definite number proportions are present, indeed must be, since otherwise we would not be in a position to hear the tones and intervals correctly and "purely." But the things we do hear are initially tone-perceptions; or rather, we perceive the numbers and number-ratios undoubtedly unconsciously present within us in wakeful consciousness not as numbers, but as tones. Although we can also say retrospectively that we consequently hear numbers spontaneously, this act of apperception of hearing is not conscious for us; it is latent, but still present.

For these reasons it is obvious that harmonics must have a singular access to this domain of "number mysticism," since with harmonics, the number reaches deeply into the domain of the unconscious, into the very domain of our psychical life, from which these symbols, images, and analogies of so-called "number superstition" also emerge.

Since modern harmonics is currently undergoing "rebirth" and is a very young science, it is not complete enough in itself to handle ektypic analyses satisfactorily—regardless of the fact that specialists must work with the relevant domains here. All we can do here is make a first attempt at a harmonic sounding-out.

§50.4. Methods of Harmonic Number Analysis

There are various methods of harmonic analysis of simple numbers. We identify the numbers directly with frequencies or string lengths, and insert the corresponding tone-numbers, whereby we are allowed, in appropriate cases, to identify $^1/_2$ with 2, since indeed $^1/_2$ divides the relevant unit of frequency or string *twice*. Or we identify the number progression 1 2 3 4 5 6 7 with the scale **c d e f g a h** (**c**), since this succession undoubtedly corresponds to an inner number succession of our psyche. Or we see in the numbers more of a simultaneous expression for group-theoretical forms of the "P", for example the progression 1-6 for the "senarius," which covers the index 6 of the "P", at least its two reciprocal basal ratios. We must always seek to trace the findings in question back to a harmonic wholeness-form, through which it might naturally appear that some number or another is associated with various such harmonic forms, or conversely: that a harmonic form is able to interpret various numbers. Furthermore, attention must be paid to the *origin* of the numbers in question. For example, there is no sense in analyzing the absolute dates of years, months, etc., since for example the year 1939 is dependent in its numeric value on the arbitrarily fixed year 1, the birth of Christ. On the other hand, we can very well take the proportions of various dates among themselves for the occasion of a harmonic analysis, since this is a matter of comparing time periods. It likewise makes no sense, for example, to place the tone-values **c g e** in the number progression 135 and then to believe that this number one-hundred-thirty-five has something to do with the triad. With such isolated numbers we must first examine what relationship they have to the generator-tone 1 **c**; in this case the number 135 has the tone-value **cis**$^{\wedge 7}$.

§50.5. Individual Numbers

The Number 1

Aristotle (*Metaphysics* I, 5) writes of Parmenides: “Since he is of the opinion that it is impossible to speak of a non-being beside being, he finds himself forced to assume that being is *one*, and there is nothing else ... Since he sees himself as forced, however, to get involved with the appearances, and grasps the One as the concept, the Many as associated with the sensory apperception, he once again sets up a *duality* of causes and a duality of principles, the warm and the cold ... on the side of being he places the warm, on the side of non-being the cold.” If one substitutes the evolution of the “P” from unity according to the duality of “unlimited” ($^1/_1$ $^2/_1$ $\rightarrow$ $^\infty/_1$) and “limited” ($^1/_\infty \leftarrow {}^1/_2$ $^1/_1$)—the well-known Pythagorean concept which can only be understood at all in harmonic terms—then one understands “being” as the > 1 sector of the “P”, “non-being” as the > 1 sector, if we grasp the “P” as a whole as the inner psychic structure of our psychical capability. Even “warmth” and “cold” can be thought of as unconscious ektypics of the movement that is continually faster upwards from the $^1/_1$ and continually slower downwards. On Plato’s views on this subject, Aristotle writes (*Metaphysics* I, 16): “Thus he sets the large and small as principles in the sense of matter, and the One in the sense of substance; from this emerges the participation in the One as a result of the ideas ... the curious thing with him [Plato] is that he grasps the unlimited not as a unity, but as a duality, and turns the large-small into his elements.” This section, apparently contradicting the Pythagoreans, redeems itself immediately as a different aspect of the harmonic psychic form that is at the basis of both viewpoints. Whereas the Pythagoreans grasped the polarity

(limiting) $^1/_\infty \leftarrow {}^1/_1 \rightarrow {}^\infty/_1$ (unlimited)

in the sense of the “large and small,” the “unlimited” and “limiting,” thus purely geometrically, Plato sees the whole, i.e. the two principles that emerge from the unity $^1/_1$, as purely theoretic and both unending, as indeed the mathematic term $^1/_\infty$ and $^\infty/_1$ allows in any case.

Plotinus seeks to clarify the relationship of the intellect to the *One* with images. He compares the generated nature of the intellect through the One with a brilliance erupting around the One, while the One remains quiet “like the brilliant light that surrounds the sun...” “The One is like the life of a mighty tree, it pervades the All in which the beginning remains and is not entirely destroyed, simultaneously solidly founded in the roots” (A. Drews: *Plotin*, Leipzig 1907, p. 118). Here, also, the value-formal expression of the “P” is obvious: the “One” bathed in light by the $^0/_0$ that is identical with it, and its “equal-tone lines,” and the “generator-tone line” with its “all-pervading” successive manifestations of the unity $^1/_1$ $^2/_2$ $^3/_3$ ... as well as the overall continually

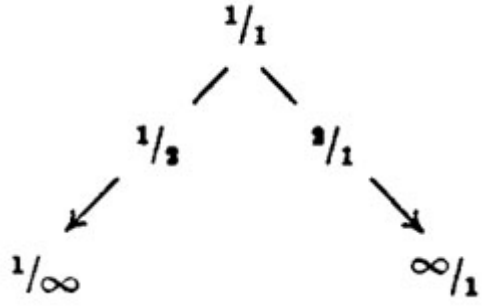
emerging idea of the "tree" as one of the primal expressions of the "P". The theorem of the equal-tone lines, i.e. the return of all being-*values* to the divine ($^0/_0$), is found summarized in the following words by Plotinus (6th *Ennead*, Book 9): "Every soul is an Aphrodite, which is darkly indicated by the myth of the birth of Aphrodite and of Eros born with her. In its natural condition, the soul aspires toward God, so as to lovingly become one with him, as a virgin of high birth longs for a noble love. But when it has fallen down into generation, and is at the same time beguiled by the intoxication of sensual love, it has traded for another, mortal love, and behaves impudently in the separation from its father. But finally, it begins to hate the mischief down below, it cleanses itself of its earthly shackles; absolved, it returns to its father and finds its true salvation with him" (Plotinus, *Ennead*, tr. by O. Kiefer, Jena 1905, vol. I, 129).

"Instead of the second One of Iamblichus, Proclus has a limited number of unities emanating from the primal Being: the Henads [from ἓν = Hen = the One], which represent an intermediate transition from the primal One [$^1/_1$] to the eternally growing and finally unlimited multitude in the lower regions" (Überweg's *Geschichte der Philosophie*, I, 1926, p. 627). Compare to this idea the generator-tone line $^1/_1$ $^2/_2$ $^3/_3$ ... $^n/_n$, which actually constructs an "intermediate transition" between the ratios in the "P" system!

A substantial book could be written on the unity, duality, and the dieresis of ideas and numbers in ancient times, from the point of view of harmonic akróasis, and I believe that from this true number-harmonics, not only could many theorems, previously only examined purely philosophically, be interpreted in a new way, and the spiritual and psychical life of the ancients be classified in general terms, but above all, at least a ray of light could be thrown on the jungle of ancient number-magic that is almost impenetrable today, especially that of late antiquity (Gnosis etc.), which in many cases can be traced back to Pythagoreanism and Orphism. As for the illumination of the Pythagorean number theorems, the first harmonic attempt since Thimus was made in my essay on Pythagoras (*Abhandlungen*). Furthermore, see §25 and §55 of this text.

The Number 2

If we take the number *two* as an essence in the sense of the polar emergence of the two principles from the harmonic unity:



then a whole world of number-symbolic observations appears to us. I am reminded of the dualistic religion systems and philosophical doctrines, the Dyas of Ormuzd and Ahriman, the Chinese Yin-Yang, the symbolism of sexual polarity in various cults and epochs in art, etc. Compare this with §23a.2.***The Number 3***

The three as a number, and *three*-ness as an essence, as we saw in §30, is localized at a decisive place in the "P" system:

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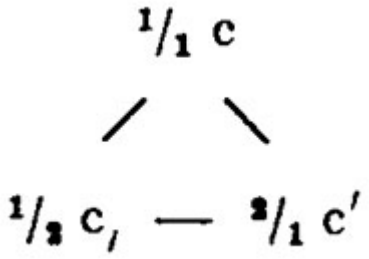


and it is thus understandable that this akróatic form presses towards realization especially powerfully in the human consciousness as the image-concept of the "trinity" and the manifold ideas connected with it (body-soul-spirit; time-space-causality; thesis, antithesis, synthesis; thinking, willing, feeling; truth, goodness, beauty; triads of gods like Brahma, Shiva, Vishnu; the threefold burnt sacrifice of the Jews; the thrice holy, holy, holy is the Lord Zebaoth; the Brahmanic trinity of the Trimurti; the Greek triglyphs; etc.). Poets, also, cannot elude this inner significance of the trias. In the *Prometheus* of Aeschylus (515-516), Prometheus answers Oceanus's daughter's question: "Who steers necessity?" by saying: "Threefold Moira (fate)." Even if we knew nothing about harmonic psychophysical anchoring, we would have to accept an image-concept latently present in our subconscious determining the various trinitarian realizations in our waking consciousness.

The Number 4

In the symbolism of the number *four*, I finally see an expression of a "coordinate consciousness," which is based physiologically on the balance organs in our ears and is thus harmonically founded. The four, then, plays a role especially in the philosophical and religious *systems*, or predominantly appears where there is a more realistic thought and perception, more oriented towards the world and the here and now. The four and the square are known in all possible variations in Chinese culture; the Romans not only laid their cities out mostly at right angles, but also imagined the Earth as a right-angled coordinate system (M. Cantor: *Vorlesungen über Geschichte der Mathematik*, 4th ed., 1922, p. 533). Since four is the number of matter, the Four Horsemen of the Apocalypse destroy (Revelation, Ch. 6; here the four colors are white, red, black, and sallow, i.e. deathly green—cf. the Tarot colors) turning that which deserves it back into chaos, i.e. to simply formless space. The ancient Indian book of the Laws of Manu divides humans into 4 categories and teaches 4 sciences. If this "Quadrivium," albeit different in content, continues so tenaciously up until the Middle Ages, that is only proof for the "topological" significance of the

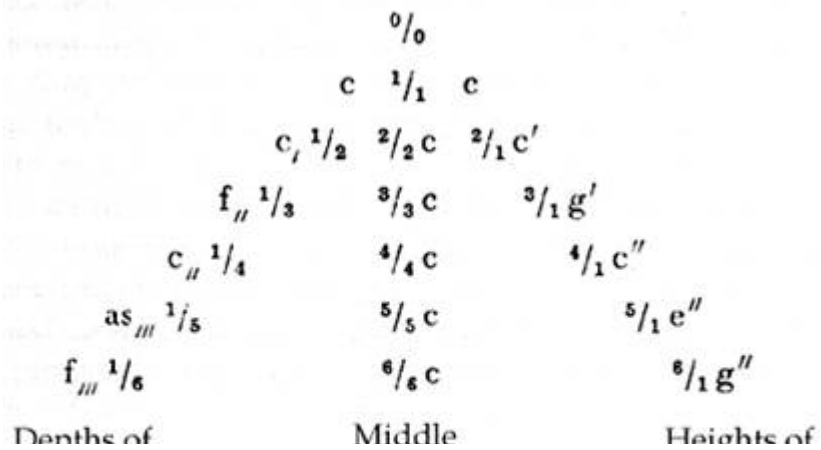
four, which naturally can only be an ektypic expression of the four as a psychical value-form.***The Number 5***

The *five* as an image-concept and essence again has an entirely different character. Here, harmonic analysis must insert or underlay the 5th ratio, i.e. the third interval, the "gender interval" (see my *Harmonia Plantarum*, p. 201 ff.). The ektypic analogy is especially close. Five is the number of Ishtar, the Babylonian Venus, and its symbol is the pentagram. There are five-sided temples of Venus from Hellenistic times (Baalbek). The spiritual tendencies of Christianity converted these ancient cults to the worship of the Virgin Mary. The pentagram is worn as an amulet as a symbol of the spiritual Eros, the love of God, and this aspect reminds one of the colossal pentalpha-rose windows in the west end of various Gothic cathedrals. Not only in the Orient, but also in modern Italy , the spread five-fingered hand serves as magical protection against the "evil eye." Consider, further, the *quinta essentia* of the Alchemists, which was the actual generating means, only to be used correctly by a loving and humble hand, to create the *lapis philosophorum*, the philosopher's stone. All these symbols, image-concepts, and connections, with their special characters, must have a deeper reference-point in our psyche.

The Number 6

We once again enter an entirely different sphere when examining the symbolism of the number *six*. Harmonically, six signifies the "senary," i.e. the pure chord in the partial-tone series, the index of the pure major-minor chord domain in the "P" system, and the senary ratios in the index of the audible, as material for normative music-making. One should consider inwardly what this restriction of the major and minor chord to the frequency or wavelength numbers 1 2 3 4 5 6 means for the importance of this number group and its signifier 6.

Thus it is no wonder that in theological arithmetic, for example, the number six is defined as the symbol "of animation and the nature of the living," and if we remember the various further ektypic meanings of the senary, we can write this definition as a motto. There is a considerable symbolism of six-pointed stars (hexagrams), which finds its most beautiful artistic expression in the great cathedrals even more commonly than the Pentalpha. The significance of the hexadecimal system has already been discussed (§26a.2). The "six days' work" in the Bible is in a certain sense the most marvelous expression of the senarius with regard to its ektypic expression, and one needs only to look at the "skeleton" of the "P":



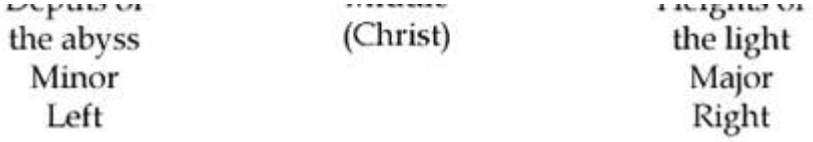


Figure 455

to be able to read off the "six to the right, six to the left" of the Christian (and other) symbolism with all its accompanying ideas. The Chinese cultural attaché in Switzerland , Lin-Tsiu-Sen, writes in his excellent book *China und Japan* (vol. I, Zürich-Erlenbach 1944, pp. 161-162): "The oldest record of religious perception of the Chinese is in the first book of the Shu King, in which it is said of the legendary Emperor Shun that after his coronation in 2255 b.c., he sacrificed

to the Shang-ti, to the highest,

to the six venerable ones,

to the mountains and waters, and

to the hundred spirits.

Western savants have often wanted to see a highest personal God in the Shang-ti; the six venerable ones are almost harder to interpret." Here if we set the Shang-ti as our symbol $^{0}/_{0}$ (Eidos, impersonal deity), the six venerable ones as the senary of the primary pure chord, the mountain and water as the polarity $^{1}/_{\infty} \leftarrow {}^{1}/_{1} \rightarrow {}^{\infty}/_{1}$, and the hundred spirits (which, as Lin-Tsiu-Sen remarks, means nothing more than "all") as the multitude of "P" ratios, then in this ancient Chinese religious document we have a precise ektypic expression of primal prototypical harmonic value-forms, which manifested themselves in those ancient times when thought was still intuitive, in such image-concepts as Shang-ti, six venerable ones, etc.

Then there is the Zodiac, indeed our whole system of time measurement and angle division, which have the "six" fully in their backgrounds as a value-formal gestalt. As a psychical expression in harmonics, the 6 and the number-forms connected with it (double series for every 6, the number 12, the hexadecimal system, the senary, etc.) will always be the symbol for a something closed, "effable," capable of realizing itself. Thus it is merely a sign of deeper intuition when Jakob Böhme identifies his "sixth nature-form" with the "reverberation," i.e. with effability, the "voice" of the world.

The Number 7

The number *seven* in harmonics has the significance of the seven-step diatonic scale. At the seventh place in harmonic series-development, an "ekmelic" ratio appears for the first time, i.e. a ratio no longer applicable in practical musicianship:

$^{1}/_{1}$ **c** $^{2}/_{1}$ **c¢** $^{3}/_{1}$ **g¢** $^{4}/_{1}$ **c¢¢** $^{5}/_{1}$ **e¢¢** $^{6}/_{1}$ **g¢¢** $^{7}/_{1}$ ^{x}**b¢¢**

We tolerate this so-called "pure seventh" in the chord **c e g** ^{x}**b** as still "in tune," if a bit too low; but as a tone in itself, it does not fit in our tone-system. As a *step*, however, something new and strange appears, and if we observe its position between 6 **g**¢¢ and 8 **c**¢¢¢, we can say: at the "location" seven the tone-apperception "reposes," or at least stops to think, to then begin a new octave again at the eight (8 **c**¢¢¢). This stopping to think, however, has a completely different character akróatically. In the seventh chord **c**-**e**-**g**-^{x}**b** that it defines, our psyche perceives a summons to a continuation, an advancement into another domain of perception, which is expressed musically through the bringing of this chord to some kind of resolution:

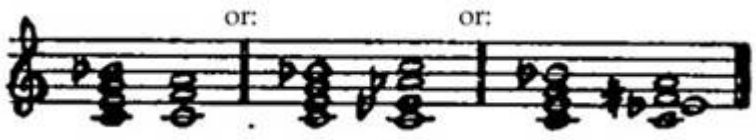


Figure 456

In any case, outside the seven-step scale, the seven in the harmonic ratio-development signifies the first value that one can view as "strange," "not in tune," indeed "wrong" *or* as the step of a transition into another world, or a summoning thereto.

Precisely these interpretations can be found expressed in the number-mystics and symbolism of the seven in manifold forms. The seven-step scale reminds me of its identification with the seven "planets," meaning the sun, the moon, Mercury, Venus, Mars, Jupiter, and Saturn. The "harmony of the spheres," connected with this and with harmonic proportions, constructs a typical image of a circle, which reaches far into domains of cultural history and art history, and has remained influential up to modern times. The parallel scale—the days of the week—also belongs here. Dio Cassius writes that the Egyptians brought the order of the planets in agreement with the days of the week, and arranged the series-progression "according to every fourth step of their scale."

With this arrangement:

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
h	**e**	**a**	**d**	**g**	**c**	**f**

these fourths, put in order, yield the diatonic scale:

c d e f g a h

As for the "evil seven," i.e. the uncomfortable, "out of tune" feeling arising with the perception of this number, folklore is full of examples. There are notable temporal periods in history where the seven was an unlucky number. For example, the following kings of France were taken prisoner: Louis IX, in the year 1250, by the Saracens in Egypt; John, the seventh king after Louis IX, after a

battle in 1356; Francis I, the seventh after John, by Emperor Karl V in 1525 at Pavia; and the next two seventh kings after that, Louis XIV, and then Louis Philippe, by his three sons. The seven plagues of Egypt, the seven deadly sins of Catholic dogma, the seven days spent mourning the dead for the Jews, Romans, and many Oriental peoples, the seven avenging angels in John's Apocalypse, the seventh phrase of the Lord's Prayer: "deliver us from evil"; and so on.

And regarding the significance of the seven as the turning toward another (seventh chord) or its position as something special, indeed holy, Sunday is the best known ektypic realization, as the seventh day of the week, the day of rest and sanctification (for the Jews Saturday, the Sabbath, is the seventh day). This "modulation power" of the seven, in the form of intervals of seven, has so many being-values of various types, such an enormous number of applications, in every case meaningful, special, and important, that one could fill pages with them: seven mountains, seven hills of Rome, Siebenbürgen,* the seven-armed menorah of the Jews, the Seven Sisters (Pleiades), the seven Swabians and seven dwarves in folk tales, seven-league boots, the Seven Sleepers of Ephesus, "in seventh heaven," etc. Franz Boll, in *Aus der Offenbarung Johannis* (1914, p. 21), writes of a "tyranny of the number seven," and the Hebrew word for swearing (to take an oath) is, translated literally, "to be sevened," or "to seven oneself." The nature of the seven as a psychical form can hardly be denied any longer.

Harmonically, we take up the trail of the most varied aspects of this psychical form of the seven, which we would otherwise have to shrug off as something unexplainable, simply given. The fact that on the one hand we speak of an "evil seven," on the other hand of the seven as something special and holy, has its origin in the seven-step scale (harmony of the spheres), then in the setting of the psychical form of the seventh interval as something alien, outside the framework, impure; and finally, the seventh interval is the psychical expression for modulation, i.e. the transition into another, novel, "better" world, or however else one wants to express this. If we simply compare the "evil seven" with the "good seven"—for this there is also a wealth of examples (seven fat cows and seven thin cows, etc.)—as a theoretical background, we can use the conjugated double series: $^{1}/_{7}$ ^{x}**d**,,, $^{1}/_{6}$ **f**,,, $^{1}/_{5}$ **as**,,, $^{1}/_{4}$ **c**,, $^{1}/_{3}$ **f**,, $^{1}/_{2}$ **c**, $^{1}/_{1}$ **c** $^{2}/_{1}$ **c**¢ $^{3}/_{1}$ **g**¢ $^{4}/_{1}$ **c**¢¢ $^{5}/_{1}$ **e**¢¢ $^{6}/_{1}$ **g**¢¢ $^{7}/_{1}$ ^{x}**b**¢¢¢

as a basis for interpretation, analogous to the double series of the senarius.

The subject threatens to be boundless, but we will cease here with the analysis of the individual numbers, which could multiply itself many times, and turn to some special problems of number symbolism.

§50.6. The "Duplicity of Events"

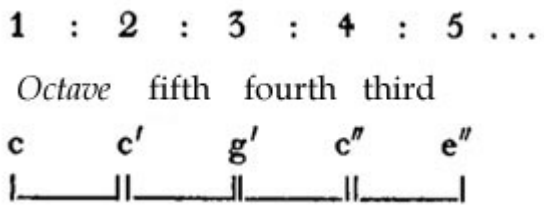
In the strict harmonic sense, this is a problem of intervals, specifically interval continuance. Since this is a continuance of the octave, of the first interval of the partial-tone series

$^{1}/_{2}$ ← $^{1}/_{1}$ → $^{2}/_{1}$

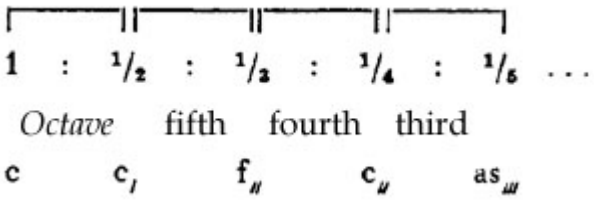
c, **c** **c¢**

which is in turn closely connected with the number two from the "double," i.e. same event (1 + 1 = 2), its place is here.

If we write out a tone-series, no matter which one, we will always find the model of the overtone series:



or its mirror image, the model of the undertone series:



That is, in the primary harmonic series-development, which is anchored both objectively in nature (the overtone series) and subjectively in our psyche (tone-perception), we have, right at the beginning, a repetition of the generator-tone in its octave c-c¢ or c-c,. This is the only "duplicity of events" in the succession of the series. If we grasp this phenomenon more dynamically, and empathize with it, then we can conclude that both in nature and in our psyche, a form must be present that somehow postulates this "duplicity" in the temporal-spatial existence of the being-values. This last, then, will stand in the succession 1 : 2 as differing in time and space, but will be inwardly identical in terms of value (two c-values). As I remarked earlier (*Grundriß* 204), this repetition of the event "in itself" among completely different situations is the most puzzling element of the "phenomenon of duplicity of events, obviously elicited by experience," but this puzzle is finally explainable and understandable through the analogous harmonic theorem.

But how about the objective condition? As for my experience, I have been able to establish the factual existence and incidence of such duplicities (as most of my readers probably have also) with many examples—train and plane crashes, important spiritual events, even the so-called "parallel events" of any type. Karl Marbe, professor of philosophy at Würzburg, published an extremely interesting two-volume work between 1916 and 1919 (Oskar Beck, Munich) on "uniformity in the world," and grasped the problem in the most general way by investigating the "return of the same" in all domains of life, science, and history. The corresponding harmonic configuration for this universal concept of uniformity would be identical, or at least similar, situations in the harmonic "P" system and its selections, whereby the duplicity of events (the duplicate happenings just named, the simultaneous discovery of infinitesimal calculations by Newton and Leibniz, parallel movements in culture and history, Hitler-Mussolini etc. *ad*

infinitum) represents only a special case of universal identities (equal intervals, identical tones on the equal-tone lines, enharmonic reincarnations, etc.): namely the special case of the narrower duplicity in the sense of the "up-beat" of the "P": **c-c¢** or **c-c**,.

Marbe, after questioning the reasons for this uniformity (I, 405), writes further (I, 410): "The crown of a universal theory of uniformity would be in the proof that a uniformity of conditions leading to uniformity is necessary." He adds to this (ibid.): "But the question still remains, why precisely this initial condition or even earlier conditions, which must lead under the influence of laws of nature to uniformities, would be present, and not others that do not lead to uniformities. This question applies in many cases as unsolvable on principle. In the oldest initial conditions accessible to our observations, one sees a historical fact that, if one does not want to attribute it to some creator, one must simply accept as given. According to this, the conditions of uniformity would also not be explainable from simple laws, but only from laws in connection with the assumption of a definite given initial condition of the world." Thus, in the akróasis of this "initial condition of the world," we have arrived upon the law of harmonic quantization. But the initial "uniformity" of this law in the position of the octave, the symbol for the primary uniformity (duplicity), lifts this law out of the simply material and merely legalistic into a sphere of values; because the identity lies not in the numbers, but in the tones. So if one substitutes the harmonic constitution of this "initial condition," the question of the reasons does not seem to me to be "insoluble in principle," but on the contrary: here we have the explanation for why, on the one hand, the law must apply both psychically (psychologically) and physically, and on the other hand, the proof for a background that is psychical, and in a further sense spiritual (the "P" system with the $^{0}/_{0}$ as a reference value).

§50.7. Magic Squares

Ferdinand Maack, the original and indefatigable campaigner for a "scientific xenology," published a series of articles, "Magisch-Quadratische Studien," in the journal he founded, *Wissenschaftliche Xenologie* (No. 2, July 1899). The following quote comes from the introduction to the series: "[The magic square] contains an ancient mathematical problem, which is continually attacked from new angles over the passage of the centuries. Even the greatest brains of all nations have occupied themselves with this problem, as the bibliography shows" (Maack gives an extensive bibliography, ibid. pp. 33-38). "Academic journals opened their columns to the magic square; university professors gave inaugural lectures about it; it represents an established category in mathematical dictionaries and encyclopedias. All this would surely not be the case if the 'tetragram' were only a 'learned trumpery of numbers,' an 'arithmetical diversion and amusement,' only a number game, a graphic puzzle. Most authors do claim this. But one can read between their lines that the 'divine square' was more to them than just a simple arithmetical example, that along the way they have the feeling that there might yet be something peculiar behind it."

What is a magic square?

The discovery of a secret number-figure, the “Lo-shu,” containing the numbers 1-9, is attributed to the legendary Fou-hi. Fou-hi supposedly saw this figure in a wondrous vision on the shell of a tortoise (Thimus, *Harmonikale Symbolik* I, 101). The illustration that the Chinese writers drew from this figure, which have been found on a four to five thousand-year-old Chinese tablet (the Lo-shu), and which is probably the oldest example of a magic square, is the number-square represented in knots:

8 3 4

1 5 9

6 7 2

If one writes out the progression of numbers 1-9 in the form shown in Fig. 457:

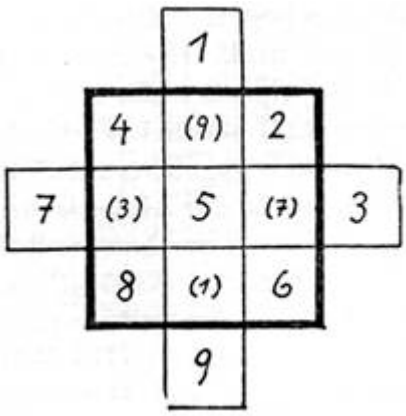


Figure 457

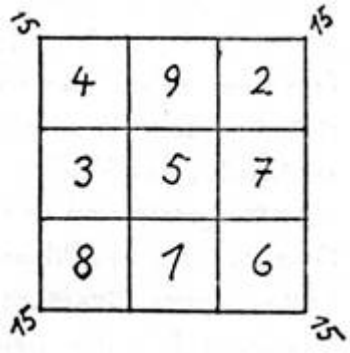


Figure 458

and adds on the numbers standing outside the square thus, in these empty fields, as is indicated by the numbers in parentheses, then Fig. 458 appears, i.e. precisely this ancient Chinese tetragram. This is one of the simplest methods of constructing the magic square. The arithmetical characteristics of the magic square, of which there are an infinite number with various indexes, is in the following: the sums of all vertical, horizontal, and diagonal rows are the same, likewise the sum of each pair of numbers opposite one another; and the parallel main and secondary diagonals form an equidistant series. Larger squares show further mathematical curiosities. But these are only the arithmetical attributes. Each magic square is also in equilibrium. If, for example, we set up the Natural Square (N.S.) that belongs to every magic square, i.e. Fig. 457, with weights according

to the measures of the numbers, for example 1 g on the topmost, 4 g and 2 g on the next fields, etc., and then hang the N.S. by a thread in the middle, then the system tips over; if we do the same with the magic square (Fig. 458), it stays in balance. Thus, the problem of magic squares is a problem of equilibrium. Furthermore, Maack discovered (ibid.) that all magic squares can be developed from the natural squares through "torsion of the magical system," i.e. through rotations of certain inner configurations. If one writes the Natural Square and Magic Square of Figures 457 and 458 as follows (Figure 459 and 460):

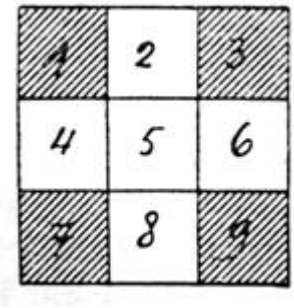


Figure 459

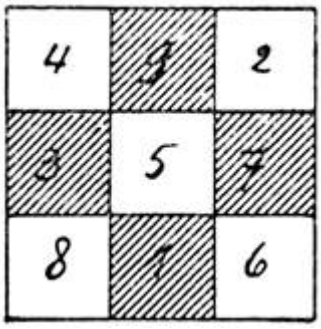
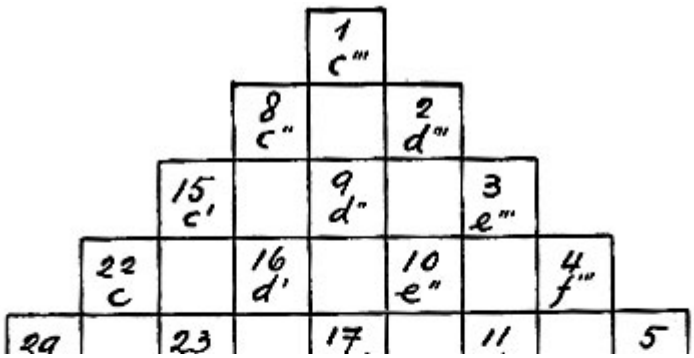


Figure 460

then the shaded fields are symmetrical around the middle field. The sum of each pair of opposite shaded fields is twice the value of the middle field in both squares (Figure 459 and 460). F. Maack calls these shaded and non-shaded fields, which thus appear both in the magic square and the natural square, "magic systems." If one now imagines the middle field as an axis, the magic square (Fig. 460) appears from the natural square (Fig. 459) through torsion of the magic system. Namely, Fig. 460 appears from Fig. 459 in such a way that first the shaded system of Fig. 459 must be rotated 225° to the right, then the non-shaded system of Fig. 459 must be rotated 45° to the right.



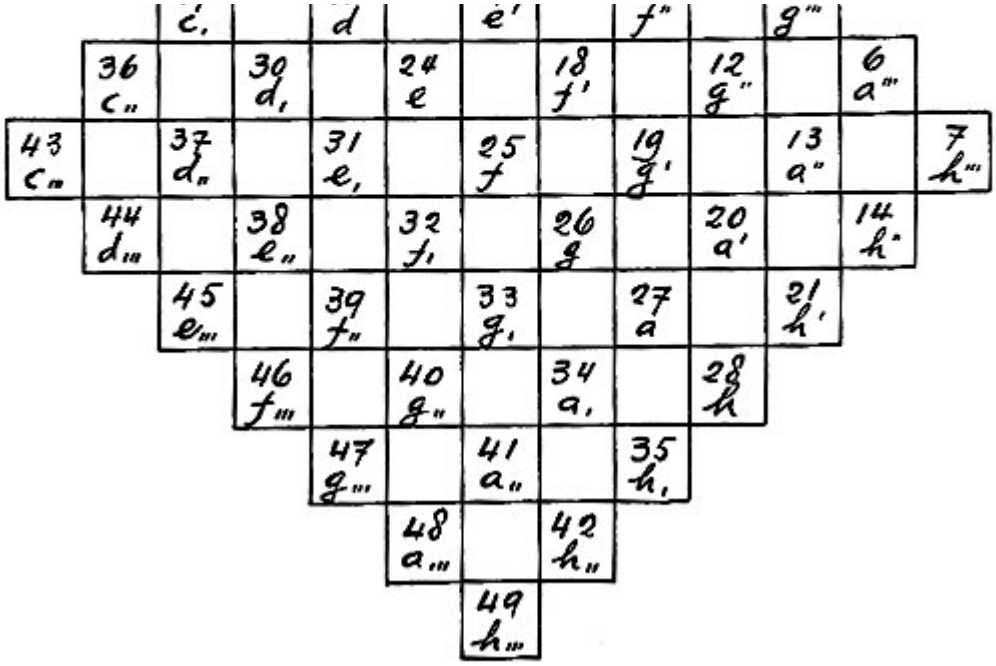


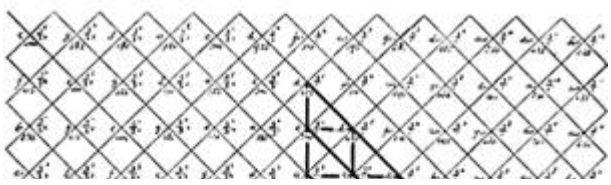
Figure 461

If we now question the "harmonics" of the magic squares, an equal intervallic quality in this simple example (here the octave would be set at 15) catches our attention. As a comparative theorem, the "complete P" would first come to mind. But there is an even closer parallel. If we construct the corresponding magic square, analogous to the above specifications, from the natural seven-square (Fig. 461), in which we inscribe the diatonic seven-step scale from 1-7, 8-14, etc., in seven different octaves (Fig. 462):

22 c	47 g'''	16 d'	41 a''	10 e''	35 h,	4 f'
5 g'''	23 d	48 a'''	17 e'	42 h''	11 f''	29 c,
30 d,	6 a'''	24 e	49 h'''	18 f'	36 c''	12 g''
13 a''	31 e,	7 h'''	25 f	43 c'''	19 g'	37 d''
38 e''	14 h''	32 f,	1 c'''	26 g	44 d'''	20 a'
21 h'	39 f''	8 c''	33 g,	2 d'''	27 a	45 e'''
46 f'''	15 c'	40 g''	9 d''	34 a,	3 e'''	28 h

Figure 462

then we are immediately reminded of our diagram of fifths (Fig. 463), in which we find the tone-values of the magic square (Fig. 462) drawn (in a thick line) starting from $^1/_3$ f¢. Admittedly, in this fifth diagram, the ratio progression is limited at h, due to the 6 fifth intervals f c g d a e h.



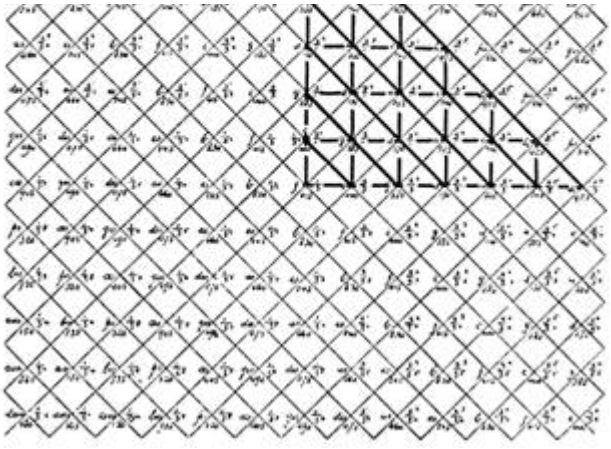


Figure 463

Furthermore, the lines of the equal octave tone-values are different. But yet the ordering of the magic square appears undoubtedly to agree more closely with that of the fifth diagram, and therefore also with that of the "open P." Mathematically oriented readers who are interested in this problem will certainly find an exciting field of operation on the basis of the above. In itself, the domain of the square (see Bibliography) is already interesting enough, and although it is still considered by many today to be a useless game, since no machines, bombs, or grenades can be manufactured *de facto* with its problems, I still believe that any serious mathematician would dismiss such a superficial judgment. Otherwise he would have to think of all of mathematics as a "useless" or "profitable" game, against which admittedly nothing could be said.

From the many historical writings about the magic square, one more is introduced here that is important for us. Around the year 1000, in Arabic cultural circles, there existed a strange Neoplatonist sect known as the "Brethren of Purity." It was a secret society that was founded in Basra around the year 960, and they opposed strict Mohammedan faith with free philosophical thought. Within this order, an encyclopedia of 51 treatises was created, which arranged and summarized the knowledge of the times according to its elements. "The center of their thought is the study of the soul, which for them tends towards a doctrine of its development from the lower forms to human individuality, and its regeneration in the perfection of its origin. The worldview at the core of this speculation is the emanation doctrine of the Plotinians, with their universal Intellect and their all-pervading Universal Soul, whose formative activity is evident in nature and in the creation of humans, to which Pythagorean number-symbolism is added to make the emanation system more understandable through number ratios. Also various symbolisms, such as that of letters, tone-harmonies [!], etc., are used to demonstrate that all in the material and spiritual world is an image of the stepwise emanation from the world of pure spirituality" (J. Goldhizer, *Allgemeine Geschichte der Philosophie*, Kultur der Gegenwart, Vol. I, 5, 1909, p. 53). Unfortunately, I have not yet been able to obtain a copy of the 8-volume *Philosophie der Araber nach den Schriften der Lauteren Brüder* (1858-1886) by F. Dieterici. I have only been able to look at the *Naturanschauung und Naturphilosophie der Araber im 10. Jahrhundert nach den Schriften der Lauteren Brüder* (Berlin 1861) by the same author, but it was not very fruitful with regard to our harmonic interests. Moritz Cantor, in his *Vorlesungen über Geschichte der*

Mathematik (4th ed., 1922, p. 516), states that "magic squares play a mysterious role in the Arabic philosophical sect of the so-called Brethren of Purity, squares with 9, 16, 25, 36, 64, and 81 fields were especially familiar to them, therefore there must surely have been a method available with which to construct them."

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[1] Hellerau 1919, p. 24.

[2] Knaur's *Konventionelles Lexikon*.

[3] Freiburg 1887, vol. I, p. 157.

[4] I, 50.

[5] Op. cit., I, 144.

* *Translator's note*: the German name for Transylvania , literally "seven castles"