HANS KAYSER

# A HARMONIC DIVISION CANON

ANALYSIS OF A GEOMETRIC DIAGRAM IN VILLARD DE HONNECOURT'S ARCHITECTURE BOOK

(Harmonic Studies, Volume I)

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Fig. 15a. Villard's figure in the Basel goldsmiths' division canon

#### HARMONICS

If armony: a word almost forgotten in the current apocalyptic collapse of European culture, amidst the hecatombs of blood, the destruction of cities, the torture of human souls, and all the endless suffering connected with these things: the now almost unendurable martyrdom of those who have been forced through the merciless grinder of almost six years of war! But when we speak the word "harmony," when we allow its sound to play gently through our souls like a long-forgotten melody, then perhaps it will appear to us that a new hope is resonating along with it; that amidst the demonic noise of these dark times, a spark of tranquility, rest, and inner peace may be glimmering, a "song that is the lingering sound of the melody of the eternal spheres" for which the human soul has forever yearned, and yearns still.

This yearning, keenly present in all races and peoples, but especially to us today, caught in this storm of ghastly experiences, may well be the reason why the human capacity for thought has grown since the early ages of the harmony concept, and has developed it into a discipline whose name bespeaks its origins: *harmonics*.

In classical and pre-classical thought, and in the traditions of peoples outside of Europe, there is a relatively well-defined domain that has been almost completely neglected by historical studies: that of number harmonics and harmonic symbolism. Viewed outwardly, it appears to deal with connections between numbers, stars, notes, and mythological symbols in relation to the harmony of the spheres—but viewed inwardly, it deals with the great question of the relationship between nature and the soul, the influence of the psychical over the natural, and transmutation from the psychical into original, prototypical image-concepts. The approach behind this kind of thought is consciously or unconsciously "harmonic," meaning that behind these image-concepts, there are forms that are either directly derived from tone-number relationships, or else correspond to psychical elements equivalent to these relationships. In the ancient Chinese political science of Li-Gi, harmonic thought was promoted to the level of political wisdom: "Music brings about unification, conventions bring about separation. In unification people love one another, in separation they are wary of one another." This synthesis of tone-values and analysis of tone-numbers (in the harmonic manner of speaking), or the world of values (prototype: "music") and the world of knowledge (prototype: "convention"), is summarized in the following words: "Music has its creative origin in heaven, conventions are formed on earth. If the formations are too many, there is confusion; if the creations are too many, there is violence." With these simple maxims, the Chinese people preserved their culture for 3,000 years. Lao Tzu's 42<sup>nd</sup> chapter—"The Tao gave birth to the One, the One gave birth to the Two, the Two gave birth to the Three, the Three gave birth to all creations, all creations leave the darkness behind them and embrace the light"-can be connected directly with the fundamental harmonic diagram. These two examples will suffice, though there are many more from the mythology and wisdom of the East, for which harmonic analysis often offers surprising insights.

In Pythagoreanism, harmonic thought often manifests as an independent science. According to legend, Pythagoras, shortly before his death, asked his favorite pupil to strike the monochord, the one-string, for one last time, thereby indicating that the highest thing in music was not of sensory nature, but instead related to intelligible observation. The monochord was the Pythagoreans' experimental instrument. The system of tone-numbers they discovered through monochord experiments was the mathematical tool with which they analyzed the cosmos and the psyche. Today it is assumed that European science holds the birthright to the knowledge of the dependency of interval on string length and the numeric establishment of this relationship

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(Windelband: Lehrbuch der Geschichte der Philosophie, ed. Heimsoeth, 1935, p. 326). In this way the qualitative (tone) is precisely connected to the quantitative (wavelength). But here, people forget that for the Pythagoreans, the converse was at least equally meaningful: the quantitative, the material, and things calculable by means of number thus gained psychical form and value, since the number ratios could be heard! This was the "formidable experience" of which the ancients spoke, and on the basis of this experience of toning numbers, the world began to resonate. Matter gained psychical tectonics, and spiritual things, the realm of ideas, obtained a concrete rooting in harmonic forms and elements. This last aspect of harmonics was almost completely lost, with only a few exceptions, and the task of modern harmonics is to reintroduce it into the scientific way of thinking as equal to what it was in ancient times. Unfortunately, none of the main harmonic works of ancient times have been preserved, and we can only reassemble some parts of the outline of ancient harmonics through the indirect analysis and reconstruction of various theorems and fragments (Philolaus, Archytas, the Timaeus scale, the ancient harmony of the spheres, the dieresis in Plato's later works, and so forth). However, the way of thinking itself, and presumably a few handed-down items, were passed on from Ptolemy to the Renaissance (Alberti, like Vitruvius, uses harmonic proportions for architecture), as far as Kepler and his Harmonice mundi. In this latter work, Kepler's famous Third Law of planetary motion was derived by means of a systematic harmonic technique, namely tone-number operations. And the last great harmonist, Albert von Thimus, in his little-known late 19th century work Harmonikale Symbolik, offers a historically oriented overview of the number-harmonic relics of Eastern and Western antiquity, as well as many symbolic analyses and syntheses.

Almost 3,000 years of tradition stand behind harmonics. And yet, in modern reference books, one will search in vain for any mention of it as a world view, much less as a science. How is this possible?

The reason is simple. The original systematic harmonic works (those of Archytas, Democritus, etc.) have been lost. All that remain are certain theorems and methods, only rudimentarily applicable in their corresponding domains (the study of proportion, music, architecture, astronomy, symbolism). Just as it is impossible for an art historian to restore a temple frieze with numerous missing fragments to all its original beauty, so a purely historical reconstruction of the true ancient *harmonice* from the remaining fragmentary material is impossible. Here only one way remains: delving into the depths of Pythagorean thought and experimenting for oneself with the time-honored monochord in order to conjure up the voices of the ancient harmonists and open one's spirit to them in admiration and love.

The result has been the discovery of the great phenomenon of tone-number as a synthesis of two worlds: nature and the soul. This primal phenomenon has its own norms and laws. It gives rise to "harmonic theorems," a kind of syntax in the harmonic language. Harmonic theorems in turn form the building material for "harmonic value-forms," a kind of psychophysical tectonics, on the basis of which harmonics as a science first becomes possible. Beside the world view (*Weltanschauung, aesthesis*), harmonics places an equally valid and previously unknown factor of perception: world hearing (*Weltanhörung, akroasis*). Since all inwardly experienced harmonic forms can be tested by our psyche according to their "correctness," their "tuning," the psyche is the judge, the interpreter, and the intellect, with its logical forms, is merely the intermediary. The great domain of the unconscious should not fall directly within discursive thought, but should be understood thoroughly in the forms of harmonics, which are appropriate for it, and then divided "ektypically" into various domains, i.e. examined in terms of its outward forms. In harmonics, the sense of hearing, like the intellect, plays the role of sensory mediator. This is a decisive role,

for it has an advantage over all the other senses: direct *a priori* numeric perception. We can hear numbers as tones! Since all harmonic numbers are number ratios, i.e. proportions, and since every proportion can be illustrated visually, there is the possibility of a direct transposition of the auditory into the visual. This *audition visuelle* is the domain of harmonic symbolism.

It has become apparent that harmonics, newly established, has the possibility of revealing commonalities in the most varied disciplines, which we can experience as psychical certainties in ourselves. The "tone spectra" reveal harmonic structures in atoms; cadencing resonates in the indexes of crystal forms, whose typical three-step progression is also found in logical dialectic; the space-time phenomenon acquires a psychical (major-minor) aspect via harmonic analysis, as well as an interpretation surprisingly close to the modern view; quantum theory and mutation theory have their prototype in the tone-number discontinuum; the shell-like form of the inner earth reveals an obvious chord structure; the eye and the ear can be psychologically proven to be "reciprocal," i.e. to complete one another mutually, via the application of harmonic data; a harmony of plants (*Harmonia Plantarum*) is entirely possible as a morphological study; historically, harmonics sheds new light on all disciplines, from Pythagorean fragments to Plato's later philosophy, and especially in ancient Eastern mythology and symbolism; in the arts, harmonics leads to a view of aesthetics without arbitrariness as both desirable and possible; and even in religion, harmonic diagrams, admittedly *sub specie aeternitatis* and *divinitatis*, can offer modern people an ample, comforting certainty.

Two forms of protection are absolutely necessary for harmonics today: the defense of being a "discipline for everything" and protection against being cheap monism. But a discipline can be universal in the best of senses, without fancying itself to be able to solve the universe's puzzles completely; without this belief, philosophy would be impossible. And as for the danger of wild synthesizing, against which rigorous and precise education in harmonic theorems offers protection, it is enough to point to the present situation, which certainly arises not only from a deluge of wholeness but equally from a schizophrenia of thousands of halfways and ready-mades that have nothing to do with one another.

Here, harmonics makes at least an attempt to build a two-way bridge, founded on psychical values born from truly humanitarian ideals and aspiring to the sphere of the divine. How successful it is in this attempt—that depends on the relative nature of our human abilities of perception, and can only be found through the work of the harmonic scholar.

"Harmonic studies" picks certain topics from the broad domain of harmonic application possibilities, and examines them without the usual scientific baggage, in such a practical and elementary way that anyone who takes an interest in the relevant domain can verify things first hand. As with all harmonic work, it is essential not only to read, but also to work through things in an applied manner, especially drawing and copying the relevant diagrams. One should not be intimidated by the numbers and geometric drawings; only the simplest concepts of geometry and arithmetic are necessary for understanding them, and working along with them oneself will soon give one a deeper view into the *audition visuelle* that provides the initial foundations and assumptions for an akroatic mentality.

For further help in expanding the knowledge acquired in individual studies, the following harmonic works are recommended:

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1. Hans Kayser, Der hörende Mensch, Verlag Lambert-Schneider, Berlin, 1932.

2. Hans Kayser, Vom Klang der Welt (introductory lectures in harmonics), Verlag M. Niehans, Zurich, 1937.

3. Hans Kayser, Abhandlungen zur Ektypik harmonikaler Wertformen, Verlag M. Niehans, Zurich, 1938.

4. Hans Kayser, Grundriß eines Systems harmonikaler Wertformen, Verlag M. Niehans, Zurich, 1938.

5. Hans Kayser, Harmonia Plantarum, Verlag B. Schwabe, Basel, 1945.

6. Hans Kayser, Akroasis, Verlag B. Schwabe, Basel, 1946.

In progress:

7. Harmonic Studies, Volume 2: Die Form der Geige aus dem Tongesetz konstruiert, 946. armon. Occident-Verlag, Zurich, 1946.

8. Lehrbuch der Harmonik, Occident-Verlag, Zurich, 1947.

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Fig. 4. The harmonic division canon

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with which we have already obtained Villard's figure. We now have division values: at the intersection point of the diagonals, there is half  $\binom{1}{2}$  of the string AB, and at the intersection points of the diagonals with the legs of the angle DS and SC, there is the division of the string AB into three, i.e. the points  $\frac{1}{3}$  and  $\frac{2}{3}$ . The continuation is self-evident. Through  $\frac{1}{2}$  we draw lines parallel to the open string AB, and thus obtain the points E and F. Lines SE and SF, through their intersection points with the diagonals, produce the division into four,  $\frac{1}{4}$  and  $\frac{3}{4}$ . Then we draw the parallel line GH through  $\frac{1}{3}$  and  $\frac{2}{3}$ , draw SG and SH, and then, as intersection points with the diagonals, we get the division into five,  $\frac{1}{5}$  and  $\frac{4}{5}$ —and so on. Theoretically, we could continue dividing in this way *ad infinitum*, and thus obtain every rational division of the string AB; here we will stop with division at index 6. As the two monochords in Fig. 4 show, not only is the upper, horizontal monochord, i.e. string AB, divided in this manner, but also the vertical monochord shown to the right, i.e. string BC (AD). In fact, all the vertical lines undergo the same division, so that, for example, the point  $\frac{1}{2}$  is:

- 1. divided by the vertical line BC (AD),  $\frac{1}{3}$  above and  $\frac{2}{3}$  below;
- 2. divided by the horizontal line AB (DC)  $^{1}/_{3}$  to the left and  $^{2}/_{3}$  to the right;
- 3. divided by the diagonal AC,  $\frac{1}{3}$  above (A) and  $\frac{2}{3}$  below (C);
- 4. divided by the slanted line SD,  $\frac{1}{3}$  above (S) and  $\frac{2}{3}$  below (D).

And if we consider that the case is the same for every point, i.e. that each point impresses all the segments that pass through it with the value of its number and its sound, then even we modern people may quietly wonder at how, with such simple means, so fruitful a division scheme can be developed with entirely specific geometric and psychical laws (i.e. notes). But above all, we now understand that this division scheme—regardless of its symbolic background, which will be discussed later—must have been of the greatest practical use in the builders' lodges of old; it not only allowed them to elicit any exact divisions necessary for a given unit of measure in a very simple way, but above all, it allowed them to determine the ratios of the segments to one another accurately.

Villard's diagram, in essence, is the "prelude" to this harmonic division canon. Those who are in the know will be aware of what this figure was intended to mean *de facto*.

#### 5. Modification of the Geometric Division Scheme

Now, however, we will reach the same goal in a somewhat different way, this time beginning with the square (see Fig. 5).

First we draw the diagonals AC and DB, thus obtaining the halves (1/2) of the strings; then we draw the parallel line EF. Connecting lines EC and DF intersect diagonals BD and AC at the points 1/3 and 2/3. The parallel line GH drawn through these points gives us the possibility of drawing GC and HD, whereby we obtain the points 1/4, 2/4, and 3/4, and so on. As one can see, by this method one obtains the same divisions as in Fig. 4, but where is Villard's figure hiding here? It can be found in Fig. 5—although with its height reduced by half, since we started with a square—by drawing the lines EF, EC, DF, D1/2, and C1/2 by themselves. Villard's figure then has the same meaning as in Fig. 4: namely, the signification of the most important beginning or delimiting lines in the harmonic division canon. In order to be entirely sure, we will use the right angle 1 : 2 as a basis, and build the division canon analogously to Fig. 5 (not Fig. 4). Now (see Fig. 6) we divide upwards and downwards—a more detailed description would be superfluous, since it simply completes what was said above regarding Fig. 5. Now we draw Villard's figure in thick lines; here it appears the same as in Fig. 4 and Fig. 5, namely the diagonal cross and the

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#### THE GLASS BEAD GAME Bildungsroman by Hermann Hesse, published 1943



Preliminary note: For the better understanding of the final essay by Rudolf Haase, a text documentation follows from Hermann Hesse's introduction to his *Glass Bead Game*.

The novel takes place in the 23<sup>rd</sup> century, looking back upon our time.

The following excerpts from the novel give an idea of the sophisticated cult of the Glass Bead Game, as it is practiced in the monastic erudite city, Castalia, in which values of all cultures and sciences are expressed in signs and connected with each other in ritualistic "games."<sup>1</sup>

Let no one ... expect from us a complete history and theory of the Glass Bead Game. Even authors of higher rank and competence than ourself would not be capable of providing that at the present time ... Still less is our essay intended as a textbook of the Glass Bead Game ... The only way to learn the rules of this Game of games is to take the usual prescribed course, which requires many years; and none of the initiates could ever possibly have any interest in making these rules easier to learn.

These rules, the sign language and grammar of the Game, constitute a kind of highly developed secret language drawing upon several sciences and arts, but especially mathematics and music (and/or musicology), and capable of expressing and establishing

<sup>&</sup>lt;sup>1</sup> Hermann Hesse: *The Glass Bead Game (Magister Ludi)*, tr. Richard and Clara Winston (New York: Picador Henry Holt and Co., 1969), pp. 14-44

interrelationships between the content and conclusions of nearly all scholarly disciplines. The Glass Bead Game is thus a mode of playing with the total contents and values of our culture; it plays with them as, say, in the great age of the arts a painter might have played with the colors on his palette. All the insights, noble thoughts, and works of art that the human race has produced in its creative eras, all that subsequent periods of scholarly study have reduced to concepts and converted into intellectual property—on all this immense body of intellectual values the Glass Bead Game player plays like the organist on an organ. And this organ has attained an almost unimaginable perfection; its manuals and pedals range over the entire intellectual cosmos; its stops are almost beyond number. Theoretically this instrument is capable of reproducing in the Game the entire intellectual content of the universe. These manuals, pedals, and stops are now fixed. Changes in their number and order, and attempts at perfecting them, are actually no longer feasible except in theory. Any enrichment of the language of the Game by addition of new contents is subject to the strictest conceivable control by the directorate of the Game. On the other hand, within this fixed structure, or to abide by our image, within the complicated mechanism of this giant organ, a whole universe of possibilities and combinations is available to the individual player. For even two out of a thousand stringently played games to resemble each other more than superficially is hardly possible. Even if it should so happen that two players by chance were to choose precisely the same small assortment of themes for the content of their Game, these two Games could present an entirely different appearance and run an entirely different course, depending on the qualities of mind, character, mood, and virtuosity of the players.

How far back the historian wishes to place the origins and antecedents of the Glass Bead Game is, ultimately, a matter of his personal choice. For like every great idea it has no real beginning; rather, it has always been, at least the idea of it. We find it foreshadowed, as a dim anticipation and hope, in a good many earlier ages. There are hints of it in PYTHAGORAS, for example, and then among Hellenistic Gnostic circles in the late period of classical civilization. We find it equally among the ancient CHINESE, then again at the several pinnacles of Arabic-Moorish culture; and the path of its prehistory leads on through Scholasticism and Humanism to the academies of mathematicians of the seventeenth and eighteenth centuries and on to the Romantic philosophies and the runes of NOVALIS's hallucinatory visions. This same eternal idea, which for us has been embodied in the Glass Bead Game, has underlain every movement of Mind toward the ideal goal of a Universitas Litterarum, every Platonic academy, every league of an intellectual elite, every rapprochement between the exact and the more liberal disciplines, and every effort toward reconciliation between science and art or science and religion. Men like ABELARD, LEIBNIZ, and HEGEL unquestionably were familiar with the dream of capturing the universe of the intellect in concentric systems, and pairing the living beauty of thought and art with the magical expressiveness of the exact sciences. In that age in which music and mathematics almost simultaneously attained classical heights, approaches and cross-fertilizations between the two disciplines occurred frequently ...

And we suspect, although we cannot prove this by citations, that the idea of the Game also dominated the minds of those learned musicians of the sixteenth, seventeenth, and eighteenth centuries who based their musical compositions on mathematical speculations. Here and there in the ancient literatures we encounter legends of wise and

mysterious games that were conceived and played by scholars, monks, or the courtiers of cultured princes. These might take the form of chess games in which the pieces and squares had secret meanings in addition to their usual functions. And of course everyone has heard those fables and legends from the formative years of all civilizations which ascribe to music powers far greater than those of any mere art: the capacity to control men and nations. These accounts make of music a kind of secret regent, or a lawbook for men and their governments. From the most ancient days of China to the myths of the Greeks we find the concept of an ideal, heavenly life for men under the hegemony of music. The Glass Bead Game is intimately bound up with this cult of music ("in eternal transmutations the secret power of song greets us here below," says NOVALIS).

Although we thus recognize the idea of the Game as eternally present, and therefore existent in vague stirrings long before it became a reality, its realization in the form we know it nevertheless has its specific history. We shall now attempt to give a brief account of the most important stages in that history.

The beginnings of the intellectual movement whose fruits are, among many others, the establishment of the Order and the Glass Bead Game itself, may be traced back to a period which PLINIUS ZIEGENHALSS, the historian of literature, designated as the Age of the Feuilleton, by which name it has been known ever since. Such tags are pretty, but dangerous; they constantly tempt us to a biased view of the era in question. And as a matter of fact the Age of the Feuilleton was by no means uncultured; it was not even intellectually impoverished. But if we may believe Ziegenhalss, that age appears to have had only the dimmest notion of what to do with culture. Or rather, it did not know how to assign culture its proper place within the economy of life and the nation. To be frank, we really are very poorly informed about that era, even though it is the soil out of which almost everything that distinguishes our cultural life today has grown ...

In discussing these matters we have approached the sources from which our modern concept of culture sprang. One of the chief of these was the most recent of the scholarly disciplines, the history of music and the aesthetics of music. Another was the great advance in mathematics that soon followed. To these was added a sprinkling of the wisdom of the Journeyers to the East and, closely related to the new conception and interpretation of music, that courageous new attitude, compounded of serenity and resignation, toward the aging of cultures. It would be pointless to say much about these matters here, since they are familiar to everyone. The most important consequence of this new attitude, or rather this new subordination to the cultural process, was that men largely ceased to produce works of art. Moreover, intellectuals gradually withdrew from the bustle of the world. Finally, and no less important—indeed, the climax of the whole development—there arose the Glass Bead Game.

The growing profundity of musical science, which can already be observed soon after 1900 when feuilletonism was still at its height, naturally exerted enormous influence upon the beginnings of the Game. We, the heirs of musicology, believe we know more about the music of the great creative centuries, especially the seventeenth and eighteenth, and in a certain sense even understand it better than all previous epochs, including that of classical music itself. As descendants, of course, our relation to classical music differs totally from that of our predecessors in the creative ages. Our intellectualized veneration for true music, all too frequently tainted by melancholic resignation, is a far cry from the

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#### **RUDOLF HAASE – BIOGRAPHY**



Born Feb. 19, 1920 in Halle/Saale (Germany). Schooling and diploma (1938) in Halle/Saale.

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1938-1948 military service and prisoner of war in Egypt. Educational leave 1942-43 TH Berlin (engineer), further studies at the school for prisoners of war in Egypt.

1948 study at the Universities of Münster, Bonn, and Köln. 1951 promotion to Ph.D. in musicology (minors in philosophy and church history). 1951 guest auditor of the ethnomusicologist Prof. Dr. MARIUS SCHNEIDER (Köln) and contact with Dr. HANS KAYSER (Ostermundigen), frequently visited until his death (1964) leading to a studentteacher relationship.

1952 various duties as musicologist for radio and the press. 1955 lecturer, 1957 assistant managerial director at the Wuppertal Conservatory. 1952 began scientific publications and lectures, predominantly on harmonics.

1965 employment at the Vienna Academy (later University) of Music and the Visual Arts, introduction of the field of "fundamental harmonic research." 1967 promotion to university professor and opening of the "Hans Kayser Institute for Fundamental Harmonic Research." Since then, over 250 publications in 10 countries and 8 languages, as well as about 260 lectures on harmonic research in 12 countries.

#### Hans Kayser's Horoscope

From: Hans Kayser: 100<sup>th</sup> Birthday Biographical Fragments April 1, 1991, Edited by Walter Ammann. Translated by Ariel Godwin.

**HANS KAYSER** was born on April 1, 1891, at 4:00 in the morning, in Bad Buchau am Federsee in eastern Germany. The following is an interpretation of Kayser's horoscope by HEIDI BRENNER, reproduced in full. She did not know Hans Kayser personally, nor had she read the biography by Rudolf Haase.

#### A few thoughts on Hans Kayser's birth horoscope

The following are a few remarks on Hans Kayser's character and destiny, based on his birth horoscope.

I must start with one remark: the ways in which a person will develop cannot be seen from his birth horoscope. Genius, therefore, is not detectable.

Hans Kayser was born with Aquarius ascending, which is rare. This shows that he will be a very special, unusual person who will not allow himself to be pigeonholed. He will forge his own unconventional path. He will lead his life independent from dogma, following his own ideas. He may also be stubborn.

His life will be full of surprises (welcome or unwelcome). The nearest planet to the ascendant is Venus ( $\mathcal{Q}$ ), symbol of beauty, balance, and harmony, and also a symbol of art. These themes will accompany him throughout his life, not only in his own experience, but also in their spiritual realization (Venus is in the spiritual water sign of Aquarius).

The sun in Aries ( $\bigcirc$  in  $\Upsilon$ ) and the moon in another fire sign ( $\nearrow$  = Sagittarius) indicate an enthusiastic, spontaneous, highly active, but also aggressive nature. Indecision and faltering are unknown to him. The dark side of this may be impatience and impulsiveness.

His way, or goal, will lead from learning ( $\Pi$  = Gemini) to the perceiving and understanding of connections ( $\aleph$  = Sagittarius). He will desire to know what is at the innermost heart of the universe. Philosophy, religion, and mysticism are areas of interest. Through this, he will create his own philosophy. Spiritual freedom and independence are enormously important to him (AC in Aquarius, MC in Sagittarius).

Now, looking at his parental house, we can assume that he was born into a stimulating, interesting milieu (IC in Gemini II). One or more family members (mother, father, or close relatives) will probably play a highly central role in the path of his life (lunar node  $\Omega$  at IC). Later, some encounters (possibly karmic in nature) will be of immense significance to his development (lunar node axis  $\Omega U$  at IC-MC).

The connection between the two slowly moving planets Neptune ( $\Psi$ ) and Pluto (P) at IC indicate that Hans Kayser will also have to overcome many difficulties that will shake him to the core: loss of loved ones (family), dilemmas, and blows from fate against which he can do nothing.

HEIDI BRENNER

