

HINDEMITH'S "SYSTEM"—A NEW APPROACH

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THE fate of most treatises on musical theory is to be outdated the day of their appearance. Knowingly or unknowingly, the writer deals with things past. He is able to explain the music of yesterday, but the music of the day before yesterday seems to fit as badly into his system as the music of tomorrow. As a consequence the young composer often fails to see the connection between his training and the tasks ahead and generally the only advice he gets is to look at the works of the great masters. There he will discover on one page all the exceptions to all the rules he has just barely learned. Or, studying some "modern" theories and systems he finds himself on an island from which no bridge leads to the mainland of musical development in history.

When Paul Hindemith started to teach, he determined to tear down the wall that stood between formal instruction in the different branches of musical theory and actual composing. He wanted also to find the common denominator for all Western music in a theory stated and developed in terms independent of esthetic judgments and stylistic preferences, a desire expressive of a trend observed today in many fields of modern thought. Musicians have felt instinctively that such a denominator exists but many earlier quests have been weakened by the dependence on variables, such as Consonance and Dissonance, which do not remain constant for all periods in music.

The result of Hindemith's research is embodied in *The Craft of Musical Composition* (Associated Music Publishers). In Book I of this work he describes the laws governing tonal material, regardless of any style or technic. Book II, *Exercises in Two-Part Writing*, now available in translation, is a manual of truly practical instruction. The book is not an explanation or defense of his own way of composing. After putting a composition on paper Hindemith is content to let it speak for itself; if it does not live, no amount of interesting theory can save it. Hindemith's "System"

is therefore simply meant to supply an analytical background for all types of music, new and old, "classical" and "popular."

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The work-material of all our music, the twelve semi-tones of the chromatic scale, serves as the theoretical basis. By considering any diatonic scale merely as an excerpt of the chromatic, Hindemith continues a development which started with the invention of the tempered scale; he retains the distinction between enharmonic tones for orthographic reasons only.

Each of the twelve tones can become a tonal center. Around this center tone the other eleven group themselves in a different grade of relationship, somewhat like close relatives in contrast to the more distant relatives in a family. The order of their relationship is called Series 1. It is based on the acoustical theory of overtone-relations explained at length in the first volume. This Series 1 should not be confused with any pattern for melody or harmony; it is a formula which governs the relation between large tonal masses as certain laws govern the movements of the planets. For instance, if we take C as a center tone, the other eleven will appear in the following decreasing order of relationship: G, F, A, E, and so on to F#. Not only will these be governed by the "source-tone" C, but any interval or chord built upon one of them will be drawn into its controlling field. Listening to music we do not only hear a successive number of chords and melodic steps, but we also sense the organizing force which relates everything to a starting-point. Series 1 is a device by which we can control the grade of tonal coherence.

The smallest unit used as building material is the interval. All two-tone groups serve in two capacities: as melodic intervals, when the two tones are used successively, and as harmonic intervals, when used simultaneously. They respond differently to these two functions and therefore have varying harmonic and melodic values. As Series 1 represents values in tone-relationships, so does Hindemith's Series 2 show the decreasing harmonic value of intervals. It starts with the Fifth, the interval of greatest harmonic strength, then follow the Fourth, the Major Third and Minor Sixth, the Minor Third and Major Sixth, and finally the Seconds and Sevenths. Two intervals stand outside this group: the Octave at the very beginning, and the Tritone, the interval of harmonic unrest, at the end. The ability of two tones to melt together into a harmonic unit classifies them for Series 2. Another acoustical phenomenon justifies Hindemith in establishing this order, namely the appearance of Combination Tones or Re-

sultant Tones which influence the given interval more or less favorably in respect to its harmonic strength.

All intervals have roots; one of the two tones dominates the other. While some roots are in the lower tone (Fifth, Thirds), others are in the top (Fourth, Sixths). The latter group we are accustomed to call inverted intervals. Constructing a line that shows the roots of a successive number of intervals, Hindemith calls it a *Degree-Progression*. The Degree-Progression can be expressed in notes – not in mathematical signs as were the old Degrees in Harmony – and is subject therefore to a standard, familiar to every good musician, the standard of musical logic and clarity. A cleverly worked-out Degree-Progression does not guarantee beautiful music, but a bad one will never serve as backbone for a convincing piece of music. The Degree-Progression cannot replace invention, but is invaluable as a check-up.

The dual role of all intervals, mentioned above, is responsible for the formation of so-called *Harmonic Cells* and *Harmonic Fields* in a melody. The intervals which stand at the beginning of Series 2 will infuse their strongly harmonic character even into a melody, where the two tones do not sound simultaneously but in succession; they will create a Harmonic Cell or, when their influence extends over a larger area, they will form a Harmonic Field. Certain melodic formulae have been employed by all composers in the construction of melodies. They carry various names, such as Non-Harmonic Tones and Embellishments. Hindemith defines them clearly as tones which, because of their rhythmical position or their appearance in Harmonic Fields, cannot alter the Degree-Progression formed by the main-tones of the melody and the second voice. His examples for various kinds of Passing-Tones, Suspensions, etc. are highly instructive although they are perhaps the most conservative part of his theories. For the main-tones of a melody the *Step-Progression* is of great importance. By Step-Progression Hindemith means the line that connects the high-points of a melody in steps of Major or Minor Seconds. These intervals, unburdened by any harmonic weight, since they come at the end of Series 2, form the most valuable melodic material. Step-Progressions may appear between the low-points of a melody, in fact between any number of tones, they may cross or overlap each other. Step-Progressions are comparable to Degree-Progressions in the field of harmony insofar as their existence is no indication for emotional qualities – that depends on entirely different factors. Harmonic Fields in the melody and Degree-Progressions in the harmonic

structure are both subject to the rule of Series 1. It is not essential that both should show the same root at the same time at a given point. On the contrary, it is the inter-relationship between different roots in melody and harmony which creates balance and interest in a composition.

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In regard to chordal material, Hindemith's statements are of even greater importance, since our present-day music to a large extent works with masses of chords continuously. Chords, like intervals, have roots. In the interval, the dominating tone serves as a root; in the chord, which consists of a number of intervals between all its tones, the strongest interval is responsible. Which interval is the strongest can readily be determined by Series 2. Its root will serve as the root of the entire sound-complex, regardless of how many voices there are in the chord. A few rules dealing with special constellations may be passed by, as they are of minor interest here. The Degree-Progression, already employed for control-work in Two-Part settings, now takes on an even greater importance. It is as valuable to the musician as the logarithm is to the mathematician. Hindemith's analysis of chords and their Degree-Progressions transforms a hitherto meaningless series of mathematical figures into a live musical line.

Several chords may have the same root, however much they differ in quality. To bring order into the limitless number of tone-combinations, Hindemith has created a system for their classification. The importance of the Tritone, mentioned above as the interval of unrest, now becomes apparent. The Tritone injects its character into every chord in which it appears. This fact gives Hindemith the first division within the chordal material: chords which do not contain a Tritone are classified as Group A, chords which do contain it, as Group B. Group A is subdivided into two groups; Group I: the chords without Seconds and Sevenths – the intervals of lesser harmonic value – and Group III: chords which do contain Seconds and Sevenths. A further distinction is made according to the position of the root in the chord. If root-tone and bass-tone are identical, the chord is classified for instance as III, 1 in contrast to a chord III, 2 where the root would be situated higher up in the chord. On the B-side of the chart, containing the chords with a Tritone, we find two groups of sounds: Group II, chords with Minor Sevenths and Major Seconds and Group IV, chords with Minor Seconds and Major Sevenths. Again a subdivision is made according to the position of the root within the chord. A few chords do not have a definite root. On the A-side, Group V lists two chords: the

Augmented Triad and the chord consisting of two Fourths. On the B-side, Group VI contains the Diminished Triad with its inversions and the Diminished Seventh chord. These last four do not contain an interval which would be strong enough to suppress the effect of the Tritone.

All chords usually employed in conventional Harmony as well as any tone-combination a composer could dream of can be brought under one of these headings. But besides being a system of classification it is also a system of evaluation. Starting with Group I, 1, the Major and Minor Triads, and gradually progressing through Group II, simple tritonic chords, and III, we finally arrive at Group IV, 2, the sounds with greatest harmonic tension. This ascending curve of harmonic stress, Hindemith calls *Gefälle*. (*Gefälle* is the German term for gradient, signifying for example the increase in energy due to the difference in level at two points of a river.) It is a completely new device for the measuring of harmonic forces which so far have always escaped control. Their use is familiar to all composers, but only instinctively so. The sensitive balance between the groups, even if it is only a fluctuation from I, 1 to I, 2, seems to be a decisive asset in any composition and will be discovered in every good piece of music. The preference of certain periods in music for certain groups of chordal material: Palestrina – Group I; Romantic – Group VI; Music after the first war – Group IV; indicates what is called "Harmonic Style." No amount of harmonic finesse, though, will compensate for a bad relationship between the two outer voices of a composition, since our musical past has left us still Two-Part-conscious. A check-up on this superordinate Two-Part-writing should therefore be part of any thorough analysis.

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It is a difficult task to elucidate a system by means of an article, especially when that system's great virtue is conciseness. Many omissions and also many statements which must be taken here at face-value are fully explained in Hindemith's books.

Let me summarize briefly a few of the work's most important findings: The conception of "key" has experienced a radical change. Gone is the idea that there is a definite number of chords in a key or borrowed from another key, with which the composer has to work. Instead, all tone-combinations are possible as long as their use is justified by Degree-Progression or other determining factors. Tonality is not a starting-point but a goal and must be achieved by means of cadences, organized according to Series I. Chords have only *one* meaning, regardless of the tonal surroundings in

which they appear. They stand for themselves, are therefore neither inverted, incomplete, nor in need of relation to some other imaginary sound (Alteration). Melody is restored to its original power after long dependence on harmony, to which the nineteenth century devoted most interest. Finally: Hindemith claims that all his suppositions are only of a physical nature; they are not esthetic nor are they stylistic. He wrote his book neither to preserve nor to create a style and his examples, taken from the entire literature of music, are sufficient proof.

Any student working alone with this book might find himself overwhelmed by a number of new rules and new signs not all readily acceptable. But in the hands of a good teacher it will prove to be clear and practicable; its comparisons and allusions are always imaginative and convincing. The new technic, disturbing at first, perhaps, when finally mastered helps to express whatever there is to be expressed. For years Hindemith has been haunted by the accusation implied in the term "Gebrauchsmusik." Now he will probably be as unjustly labeled "Theorist." But only a practical musician could have written this book; and every page reveals the tremendous experience which only the productive composer can acquire. It tries to teach exactly what the title claims: the Craft of Musical Composition - and the Craft only. Nowhere is there an underestimation of the supreme role of invention and inspiration in musical creation. The composer of *Mathis der Maler* would be the last to deny their sovereign power.