

Stockhausen: "Nr. 9 Zyklus"

BY B. MICHAEL WILLIAMS

Karlheinz Stockhausen was born in 1928 in Mödrath, Köln. He was a pupil of Messiaen and Milhaud, and was greatly influenced by the serial works of Webern (Wörner, 1973: 78). The work "Zyklus" (cycle) for solo percussionist was composed in 1959 as a test piece for the Kranichstein Music Prize for percussion players (Wörner, 1973: 23). The work represents the application of a concept formulated by Webern and continued by Messiaen seeking the unification of all properties of sound under a single principle of organization. Based on these influences, Stockhausen sought to apply serial control to all aspects of musical sound. In "Zyklus" he combined the idea of total serialism with indeterminacy, allowing the performer a certain amount of freedom within carefully controlled musical parameters.

"Zyklus" is scored for thirteen groups of percussion instruments. These are indicated by graphic symbols appearing throughout the score immediately preceding the musical notation for a given instrument (see Figure 1).

The piece comprises seventeen units, called periods, which are contained on sixteen spiral-bound pages. The performer is instructed to begin on any page and play all the pages successively, ending the performance with a repetition of the first stroke sounded in a given version. The score symbols are no-

Figure 2: Arrangement of instruments as suggested by Stockhausen.

tated in such a way as to allow the performer to move in any direction on the page; forward, backward, right-side up, or upside down. Depending on the direction in which the performer chooses to proceed, the periods tend to move toward or away from ambiguity.

The percussionist, playing within a circular arrangement of instruments, moves in either a clockwise or counterclockwise direction according to the chosen performance version (see Figure 2).

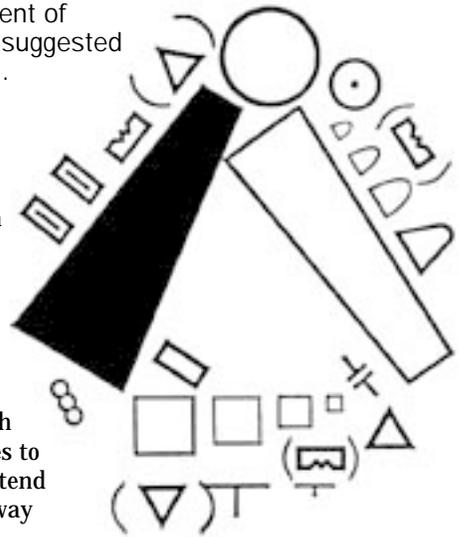
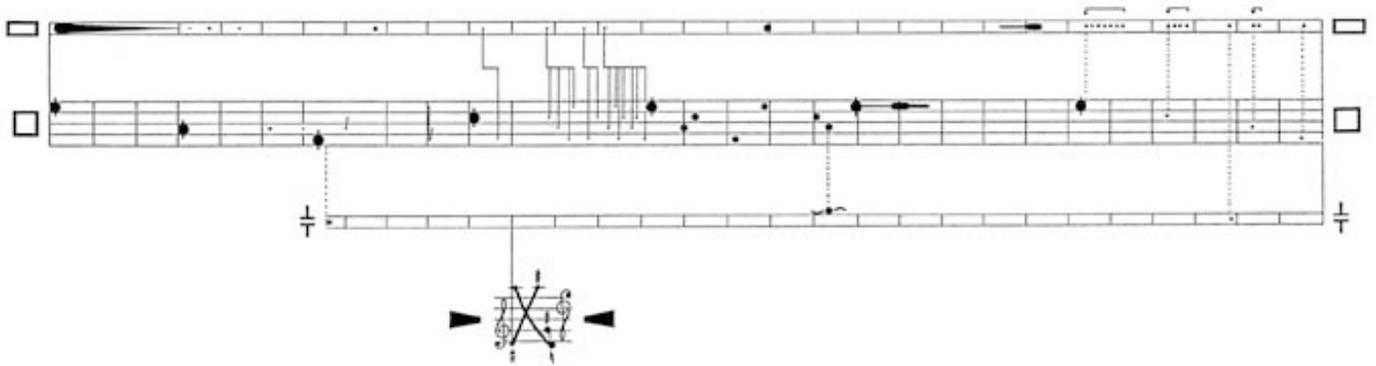


Figure 1: Graphic representation of instruments as printed in the score of "Zyklus."

<p> = Marimbaphone</p> <p> = Guero, fixed to a stand, deep sound (if possible use several gueros).</p> <p> = 2 wood-drums (African tree-drums) (each gives 2 pitches).</p> <p> = a suspended bunch of bells (if possible Indian ones of various sizes) and/or tambourine fixed to a stand, struck with a stick or with the hand.</p> <p> = Side-drum, very high in pitch, with snares; if the snares rattle too much when other instruments are struck, they may be disengaged.</p>	<p> = 4 Tam-toms. ↓ = rimshot</p> <p> = 2 cymbals. The striking-point (nearer the edge or nearer the centre) should be varied continually. ↘ = strike the centre (also applies to gong).</p> <p> = Hi-hat — = closed, struck with a stick (or close it with the pedal). —•— = open, struck with a stick. —•—•— = open, struck at the centre.</p> <p> = Triangle: continual change-over between at least 2 very high-pitched triangles. Single strokes with the heavier sticks, Tremoli with very thin metal sticks.</p>	<p> = Vibraphone (without vibrato). Sounding: </p> <p>P. = durations free. P. = where possible hold pedal for a long time.</p> <p> = 4 cow-bells, suspended without the beaters; "frog mouthed" and flat bells.</p> <p> = Gong with a raised centre. Where possible struck with a soft stick, if nothing specific is indicated. Vary the striking-point continually.</p> <p> = Tam-tam, where possible struck with a hard stick, if nothing specific is indicated. Vary the striking-point continually.</p>
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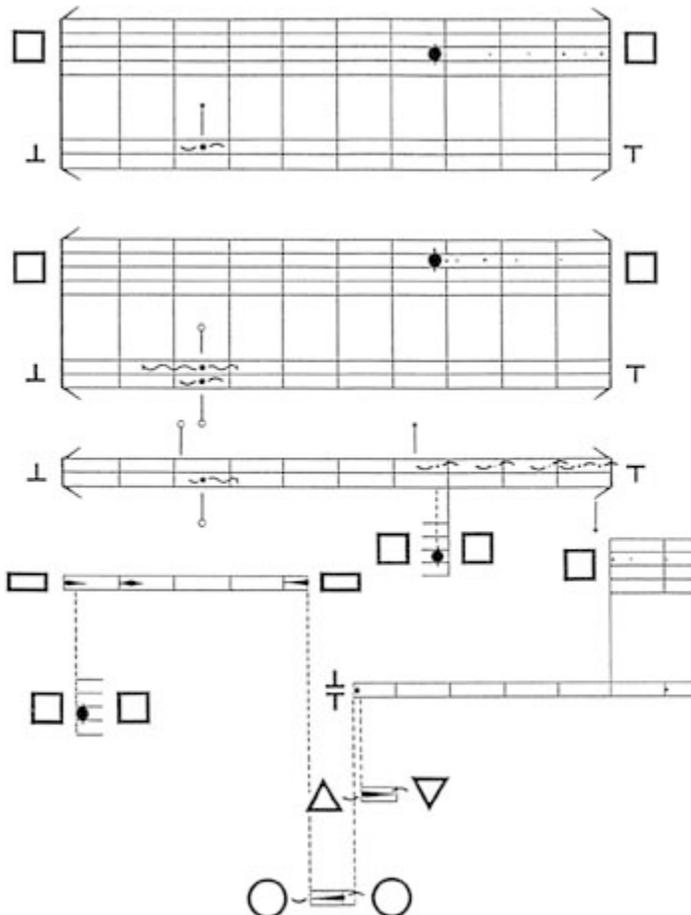
Figure 3: Structure-type one, period one.



There are nine notated structure types expressing various degrees of determinacy contained in the seventeen periods. The first structure type, which is present in all seventeen periods, is a time-scale grid comprising thirty equal units. The duration of each unit is left to the discretion of the performer, but should remain constant. The musical notation consists of points (single attacks), groups (two or more attacks that are connected and played in rapid succession), and shapes or lines (sustained tones). These notations should be interpreted according to the fixed grid (see Figure 3).

Structure-type two consists of several bracketed staves appearing above or below the fixed time grid. One structure is to

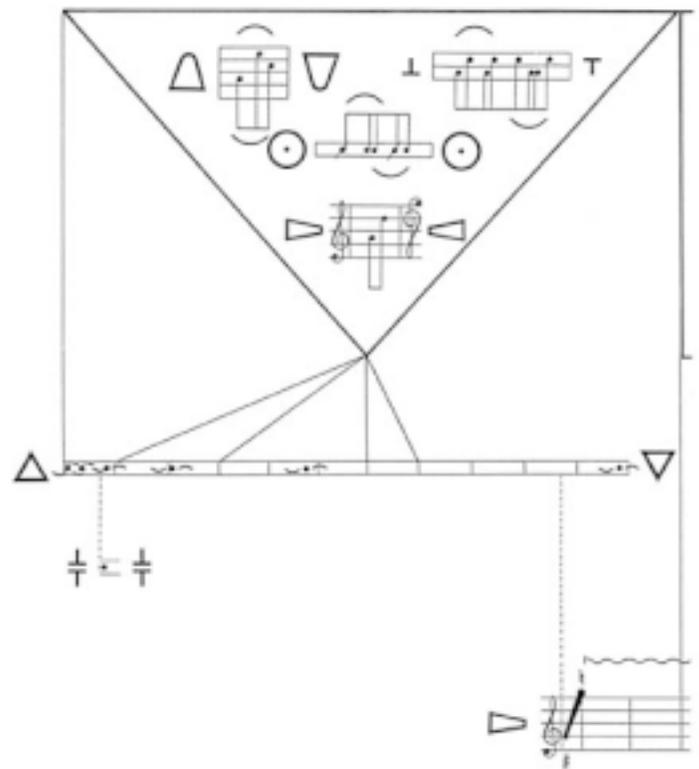
Figure 4: Structure-type two, period two.



be selected by the performer. Notations enclosed in these structure types are also played in relation to the fixed time grid. The added variable of performer choice makes periods containing structure-type two sound less determined than those employing only first structure types (see Figure 4).

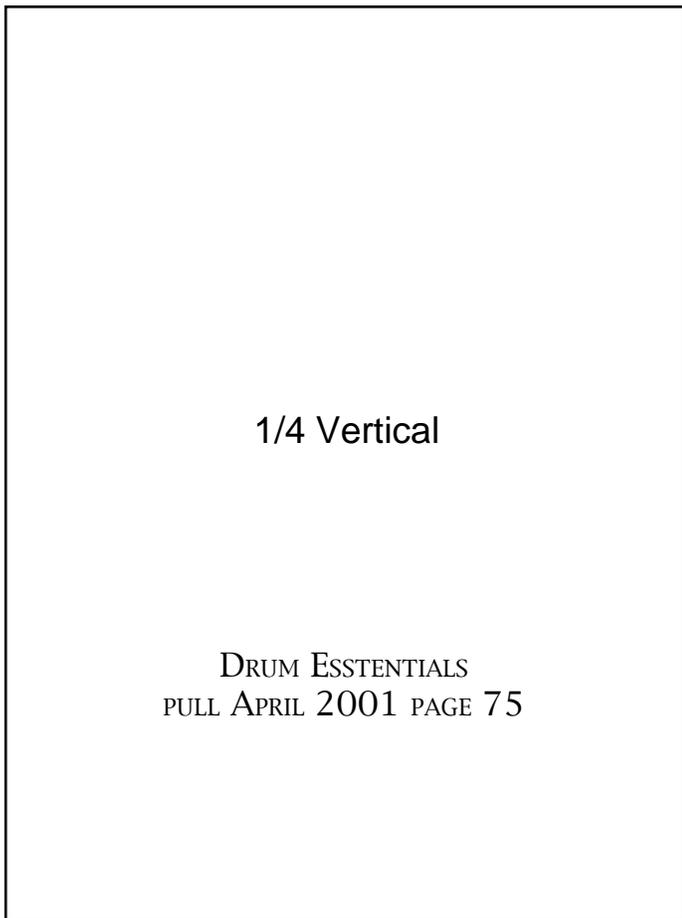
Structure-type three consists of points, groups, and lines inside a triangle figure. Each of the musical elements in this structure type is assigned a specific instrumentation and may be sounded in any order. Their placement is indicated by lines connecting the triangle with particular units on the fixed grid. Third structure types are less determined than either first or

Figure 5: Structure-type three, period six.



second structures, since the performer is allowed to choose the order of the elements to be played (see Figure 5).

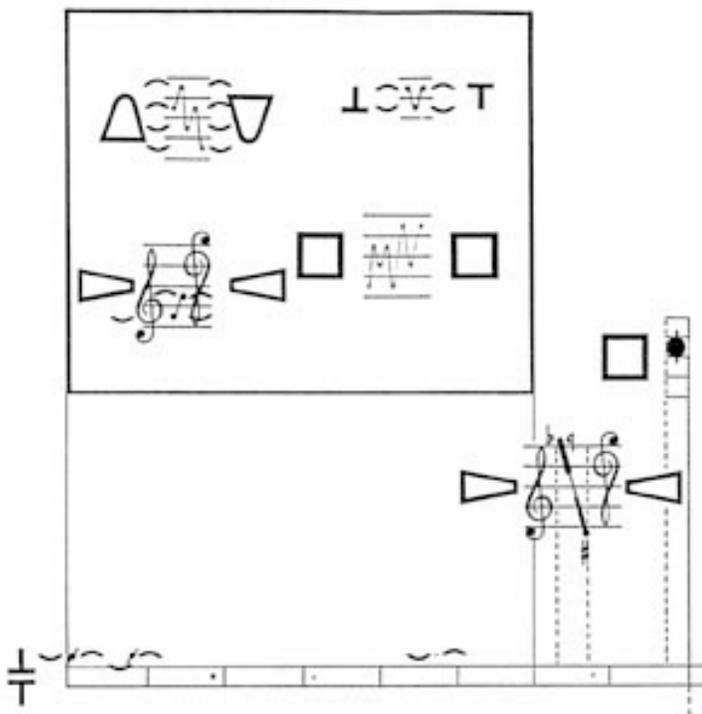
Fourth structure types are rectangles that appear above the fixed time grid and contain variable musical elements consisting of groups of strokes only. These structure types differ from type three (triangles) in that the elements may be played in any



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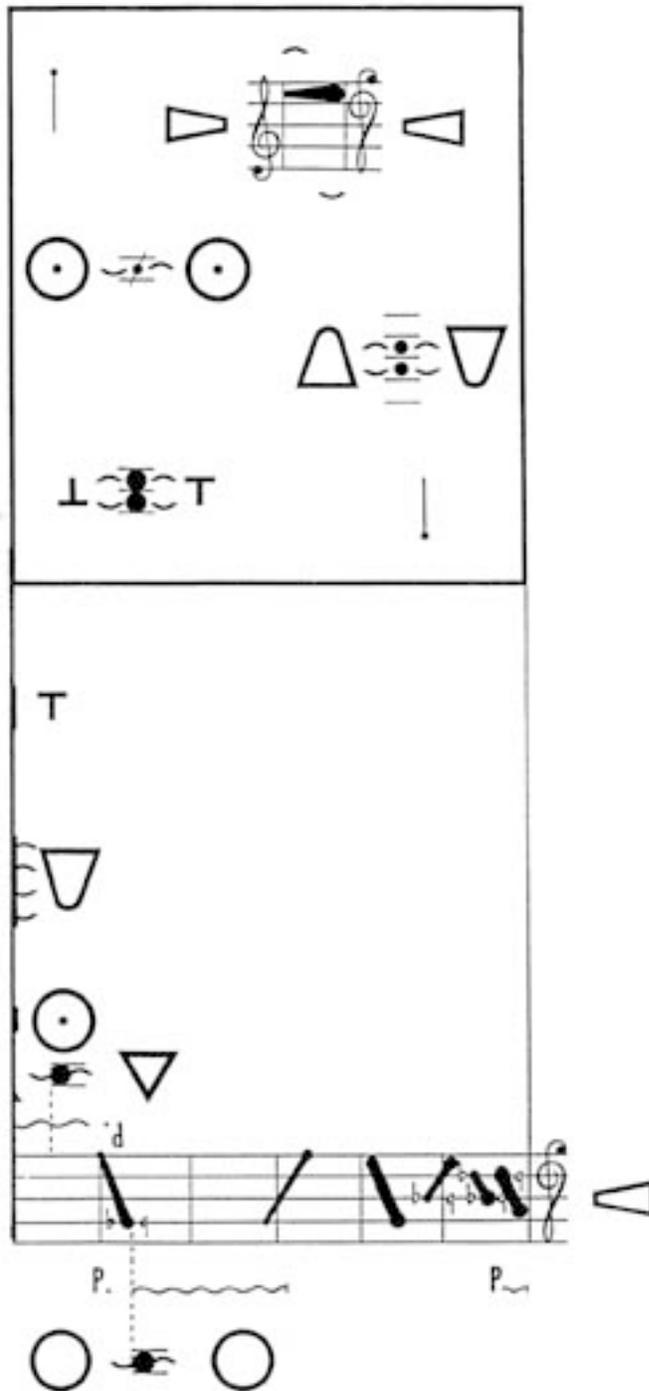
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order and at any time within the duration of the rectangle as related to the fixed time grid. Elements within the rectangles
Figure 6: Structure-type four, period four.



may also be combined with fixed elements in order to create mixtures of sounds (see Figure 6).
Structure-type five is identical to structure-type four except

Figure 7: Structure-type five, period six.



that it consists of points only, whereas type four contains groups of strokes (see Figure 7).
Structure-type six has two rectangles connected by a double arrow. Groups of strokes appear in one rectangle, and points appear in the other. The performer is instructed to alternate elements in each rectangle so that points are followed by groups, or vice versa (see Figure 8).
Rectangles that have been enlarged make up structure-type seven. These rectangles are identical to those in types four and

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Figure 8: Structure-type six, period ten.

The diagram illustrates a rhythmic structure with two staves. The top staff contains three musical phrases, each starting with a right-pointing triangle. The bottom staff contains three corresponding musical phrases, each starting with a left-pointing triangle. Vertical arrows connect the phrases between the two staves. A double-headed vertical arrow is positioned between the first and second phrases of each staff. Dynamic markings 'p' (piano) and 'd' (forte) are placed below the notes in the bottom staff.

five except additional instruments and musical elements are introduced during the period of enlargement. As in structure-types four and five, the performer is afforded the opportunity to combine the variable elements with those on the fixed time scale (see Figure 9).

Structure-type eight employs several bracketed rectangles, one of which is to be chosen for performance. These structures are similar to the bracketed staves found in structure-type two, but they differ in the types of elements from which the percussionist must choose. Structure-type eight offers a choice of pitched sounds in one rectangle and nonpitched sounds in the other (see Figure 10).

Structure-type nine is the most random and affords the performer a significant amount of interpretive freedom. This structure consists of points without stems placed along the fixed time grid. These figures are interpreted according to their relative placement on the grid, and the volume of each attack is de-

Figure 9: Structure-type seven, period eleven.

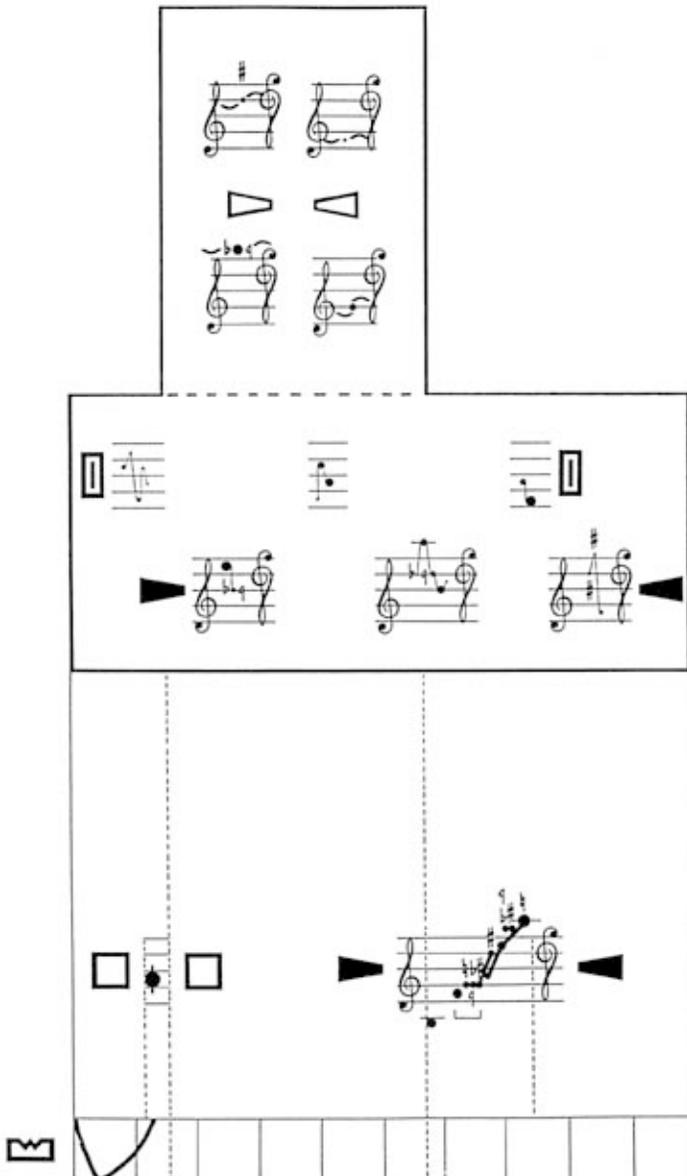
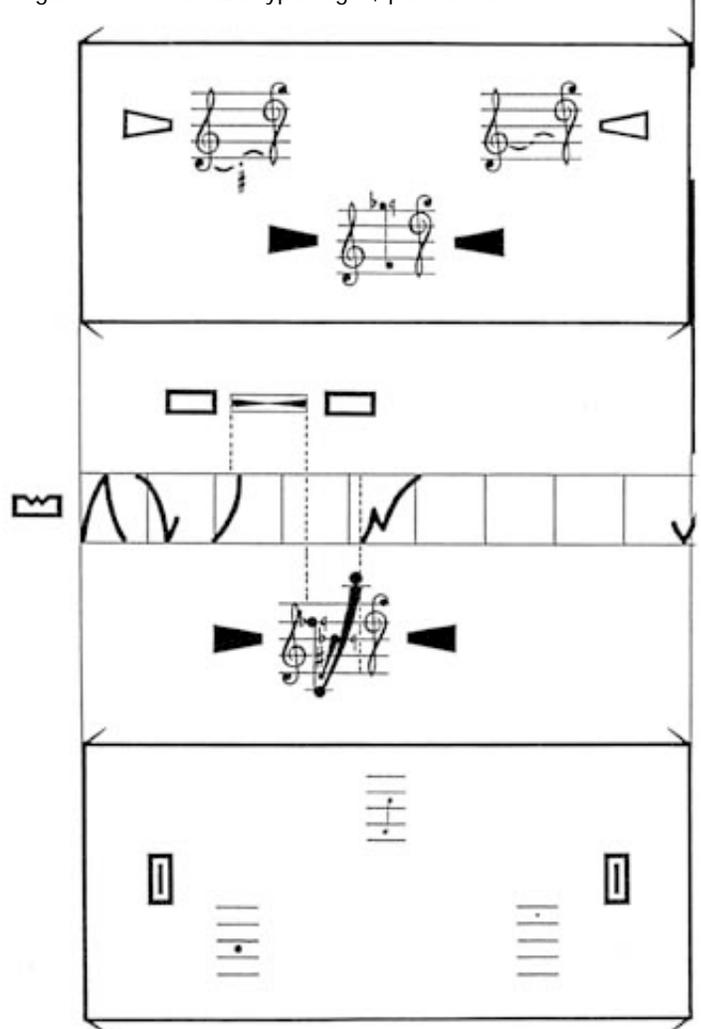


Figure 10: Structure-type eight, period twelve.



termined by the relative size of the point. The ninth structure type, displaying the most ambiguity of all, predominates in period seventeen (see Figure 11). Immediately following is the first period, which displays the most clarity. Thus, the structural cycle has been completed.

In referring to the chart in Figure 12, one can see that periods one through nine contain structure-types one through five, while periods ten through seventeen contain structure-types five through nine. Period one contains only structure-type one, period nine contains only structure-type five, and period seventeen contains only structure-type nine. Between these periods of greater structural stability occur a systematic ebb and flow of structural variety. Peaks of structural variety occur at periods five and thirteen.

The levels of musical activity for the thirteen instrumental groups correspond to the symmetrical pattern of structural activity. Periods one, nine, and seventeen contain the most concentrated instrumental activity—periods one and seventeen centering on tom-toms, and period nine centering on gongs. As with the varying degrees of structural activity, periods five and thirteen display the most diversity of instrumental activity. The diagram in Figure 13 shows the principal instruments used in each period. Each instrumental group appears over the dura-



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Figure 11: Structure-type nine, period seventeen.

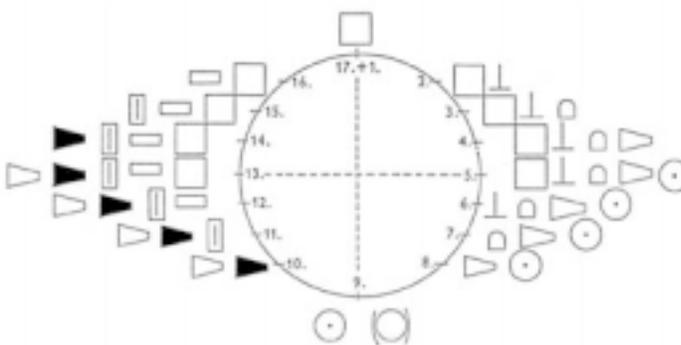


Figure 12: Structural cycle found in "Zyklus." From Harvey (1975:84)

Periods	Structure-types	Durations of each Structure-type	Relative Proportions of Structure-types
1	1	30	
2	2 1	10 + 20	(1 : 2)
3	3 2 1	5 + 15 + 10	(1 : 3 : 2)
4	4 2 3 1	6 + 12 + 9 + 3	(2 : 4 : 3 : 1)
5	5 3 1 4 2	8 + 6 + 2 + 10 + 4	(5 : 3 : 1 : 5 : 2)
6	3 4 2 5	12 + 9 + 3 + 6	(4 : 3 : 1 : 2)
7	4 5 3	15 + 5 + 10	(3 : 1 : 2)
8	5 4	10 + 20	(1 : 2)
9	5	30	
10	6 5	18 + 12	(3 : 2)
11	7 6 5	10 + 5 + 15	(2 : 1 : 3)
12	8 6 5 7	9 + 3 + 6 + 12	(3 : 1 : 2 : 4)
13	9 5 8 6 7	6 + 2 + 10 + 4 + 8	(3 : 1 : 5 : 2 : 4)
14	9 7 8 6	3 + 6 + 12 + 9	(1 : 2 : 4 : 3)
15	8 9 7	5 + 10 + 15	(1 : 2 : 3)
16	9 8	12 + 18	(2 : 3)
17	9	30	

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Figure 13: Entrances of principal instruments used in "Zyklus." From Harvey (1975:83).



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tion of five periods, their successive entrances creating a stretto of timbres.

Stockhausen's own statistical analysis of the frequency of attacks in each instrument group reveals nine cycles of specific sounds, which overlap during the course of the seventeen periods, reaching their peaks at successive odd-numbered periods (Harvey, 1975: 81). It is apparent that Stockhausen employs a complex system of serialism that governs the musical form of "Zyklus" on many levels. The cyclic form of the work continues into more specific layers of musical activity, including the frequency of rolls and single strokes, dynamic levels, vibraphone and marimba glissandi, and tom-tom rimshots (Harvey, 1975: 83).

In "Zyklus," Stockhausen employs a spatial notation in which the written figures correspond to the physical motion required by the performer to render the notation into sound. For example, the guiro notation depicts the direction in which the performer should scrape along the ridged surface of the instrument (see Figure 10). Similarly, vibraphone and marimba glissandi are also notated spatially and freely mix with more conventional notes on the treble clef staff (see Figure 7).

For all thirteen instruments, dynamics are notated proportionally, the size of the points indicating the relative volume and duration of sound. Rhythms are interpreted proportionally according to the time intervals between each entrance. In addition, single strokes are indicated by figures in dot form, while sustained tones are represented by lines (see Figure 3). As with the structural form of "Zyklus," the notation affords the performer a certain amount of freedom within a highly organized framework.

Such a complex work as "Zyklus" presents challenges to both performer and listener. Clearly, the percussionist must be well acquainted with the organizational principles that permeate the work in order to render a faithful performance. It is unlikely, however, that these organizational principles will be readily apparent to the listener. Yet, the cyclic form of "Zyklus" can be perceived on the most obvious level through the visual observance of the performer moving around the circular arrangement of instruments, completing the cycle at the same spot it began. The work, conceived and organized on many levels, may be perceived by the listener on many levels as well. "Zyklus" is a fascinating musical experience for the percussionist within the circle, and for the listener in the audience.

Karlheinz Stockhausen "Nr. 9 Zyklus"
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