

**KARLHEINZ STOCKHAUSEN** (\*1928)

S2K 53346  
ADD

DISC 1 Total time: 70'37

1-10 Klavierstücke I-IX & XI

DISC 2 Total time: 63'48

- 1 **Klavierstück X**  
Aloys Kontarsky, Piano
- 2 **Mikrophonie I**  
für Tamtam, zwei Mikrophone, zwei Filter und Regler  
Aloys Kontarsky, Tamtam I - Alfred Alings, Tamtam II  
Johannes Fritsch, Mikrophon I - Harald Bojč, Mikrophon II  
Karlheinz Stockhausen, Filter & Regler I  
Jaap Spek & Hugh Davies, Filter & Regler II
- 3 **Mikrophonie II**  
für Chor, Hammondorgel und Ringmodulatoren  
Alfons Kontarsky, Hammondorgel  
Johannes Fritsch, Zeigegeber  
Mimi Berger, Meta Ackermann, Frigga Ditmar,  
Ulla Terhoeven, Helga Hopf, Monika Pick, Sopran  
Arno Reichardt, Dietrich Satzky, Hermann Steigers,  
Peter Weber, Friedrich Himmelmann,  
Werner Engelhardt, Bass  
Einstudierung & Leitung: Herbert Schernus



**KARLHEINZ STOCKHAUSEN** (\*1928)

Time:

DISC 1

- 1 Klavierstück I 2'56
- 2 Klavierstück II 1'47
- 3 Klavierstück III 0'27
- 4 Klavierstück IV 2'02
- 5 Klavierstück V 5'24
- 6 Klavierstück VI 25'23
- 7 Klavierstück VII 6'34
- 8 Klavierstück VIII 1'43
- 9 Klavierstück IX 9'42
- 10 Klavierstück XI 13'59

Aloys Kontarsky, Piano  
(Recordings: KGH, Winterthur, Switzerland, July 1 & 2, November 15-17, 1965)

Total time: 70'37

DISC 2

Time:

- 1 **Klavierstück X** 22'15  
Aloys Kontarsky, Piano  
(Recording: KGH, Winterthur, Switzerland, November 15-17, 1965)
- 2 **Mikrophonie I** 26'27  
für Tamtam, zwei Mikrophone, zwei Filter und Regler  
Aloys Kontarsky, Tamtam I  
Alfred Alings, Tamtam II  
Johannes Fritsch, Mikrophon I  
Harald Bojč, Mikrophon II  
Karlheinz Stockhausen, Filter & Regler I  
Jaap Spek & Hugh Davies, Filter & Regler II  
(Recording: West German Radio Studios, Cologne, December 17 & 18, 1965)
- 3 **Mikrophonie II** 14'51  
für Chor, Hammondorgel und Ringmodulatoren  
(Text: Helmut Heissenbüttel)

Alfons Kontarsky, Hammondorgel  
Johannes Fritsch, Zeigegeber  
Mimi Berger, Meta Ackermann, Frigga Ditmar, Ulla Terhoeven,  
Helga Hopf, Monika Pick, Sopran  
Arno Reichardt, Dietrich Satzky, Hermann Steigers, Peter Weber,  
Friedrich Himmelmann, Werner Engelhardt, Bass  
Einstudierung & Leitung: Herbert Schernus  
(Recording: West German Radio Studios, Cologne, June 11, 1965)

Total time: 63'48

**KARLHEINZ STOCKHAUSEN:**  
**KLAVIERSTÜCKE I-XI · MIKROPHONIE I & II**

The following texts by the composer accompanied the original long-play recording. As they, like the recordings themselves, are interesting documents of their time, they are being reissued in unabridged form with this new edition.

Despite – or rather because of – the importance of tonal color compositions in my electronic music, in the orchestral and vocal works, I have from time to time concentrated on "Klavierstücke" (piano pieces); on composing for one instrument, for ten fingers, with meticulous nuances of instrumental tone and structure. They are my "Zeichnungen" (drawings). I wrote the third and second Klavierstücke in 1952 in Paris for my wife Doris, who studied piano with me at the Hochschule für Musik in Cologne. I then added the first and fourth Klavierstücke. In these four pieces, a transition can be seen from "selective" or "point" music to "group composition".

The second cycle, begun in late 1953 in Cologne, is characterized by an expansion of the tone composition by means of the piano: I found six new "touch forms" that changed the way the piano tone was built up, just as before in *Elektronische Studien* I had composed tones using a series of "envelopes". I defined new symbols for these touch forms. Above all, I was greatly aided by the discovery of harmonics

with "subharmonic" resonances: these made possible the simultaneous combination – on one tone – of short, staccato notes with soft, undamped "echo" tones. In addition, I no longer composed single notes and chords, but sounds with characteristic inner structures. The so-called "small notes" – what were earlier known as "grace-notes" – were used in great number, composed in groups of varying density around "nuclei"; Klavierstücke V-X were all characterized by preceding, simultaneous and succeeding tone groups arranged around their nuclei. Klavierstück X consists almost entirely of "small notes" forming tonal complexes of greater or lesser density around few tonal nuclei.

I have written several texts about the Klavierstücke for radio programs, and they have all been published in "TEXTE" (two volumes, DuMont Schauberg, Cologne) which includes an extensive analysis of the first Klavierstück. As early as 1954, I worked out a plan for a cycle of twenty-one Klavierstücke divided into six subcycles as follows: I-IV / V-X / XI / XII-XVII / XVIII-XIX / XX-XXI, of which I-XI have been

completed to date. Klavierstücke I-IV are dedicated to the Belgian pianist Marcelle Mercener, Klavierstücke V-VIII to the American pianist David Tudor, Klavierstücke IX and X to Aloys Kontarsky, and Klavierstück XI to Doris Stockhausen, née Andreae.

Documentation

COMPOSER

Since finishing his studies (1947-51, Cologne University and Hochschule für Musik), Karlheinz Stockhausen, born August 22, 1928 near Cologne, has composed KREUZSPIEL for oboe, bass clarinet, piano, 3 percussionists (1951); SPIEL for orchestra (1952); PUNKTE for orchestra (1952-62); KONTRA-PUNKTE for 10 instruments (1952/3); KLAVIERSTÜCKE I-IV (1952/3); ELEKTRONISCHE STUDIEN I and II (1953/4); KLAVIERSTÜCKE V-X (V-VIII 1954/5, IX-X 1954/61); ZEITMASSE for five woodwinds (1955/6); GRUPPEN for 3 orchestras (1955/7); KLAVIERSTÜCK XI (1956); GESANG DER JUNGLINGE (1955/6); ZYKLUS for 1 percussionist (1959); CARRÉ for 4 orchestras and choirs (1959/60); REFRAIN for 3 performers (1959); KONTAKTE for electronic sounds, piano and percussion instruments (1959/60); ORIGINALE, musical theater (1961); MOMENTE for soprano solo, 4 choir groups and 13

instrumentalists (1962/4); PLUS-MINUS (twice seven pages for elaboration (1963); MIKROPHONIE I for tam-tam, 2 microphones and 2 filters (1964); MIXTUR for orchestra, 4 sine-wave generators and ring modulators (1964); MIKROPHONIE II for 12 singers, 4 ring modulators and Hammond organ (1965); SOLO for one melody instrument and magnetic tape recorder (1966); TELEMUSIK (1966); ADIEU for wind quintet (1966); PROZESSION for tam-tam, viola, electronium, piano, microphones, filters and potentiometers. All works have been published by UNIVERSAL EDITION, Vienna-Zürich-London. Writings: TEXTE, Vol. I, zur elektronischen und instrumentalen Musik; TEXTE, Vol. II, zu eigenen Werken, zur Kunst anderer, Aktuelles (DuMont Schauberg, Cologne); numerous articles in periodicals, principally in "Die Reihe" (Universal Edition, Vienna; Theodore Presser Co., Bryn Mawr, Pennsylvania). First Stockhausen monograph: K. H. Wörner (P. J. Tonger, Rodenkirchen/Rhine, 1963). Since 1955, instructor at the Darmstadt International Summer Courses for New Music; since 1963, instructor at the Cologne Courses for New Music; 1963, teacher of composition at the conservatory in Basel, Switzerland; 1964, visiting professor of composition at the University of Pennsylvania, Philadelphia, U.S.A.; 1966/7, leader of a composition class at the University of California, Davis; since 1953, permanent participant in the Studio for Electronic Music of the Westdeutscher Rund-

funk [West German Radio] in Cologne, where he has been the artistic director since 1962. Regular concert tours as director and performer of his own works in all European countries, the U.S.A. and Canada; 1966, five-month stay in Japan (for composition) and Asian tour.

#### PERFORMER

Aloys Kontarsky, born May 14, 1931 in Iserlohn, Westphalia, received his first piano lessons at the age of five from his mother, later (1939-49) from Franz Hanemann Jr. (pupil of James Kwast and Max van de Sandt). In 1951, school-leaving certificate at the Oberschule, Iserlohn. In 1949, public concert with his brother Alfons (Stravinsky's Concerto for two pianos); 1951, Bartók's Sonata for two pianos and percussion. From 1949-51 lessons with Else Schmitz-Gohr at the Cologne Hochschule für Musik, together with his brother Alfons, followed by one semester at the University of Freiburg (German studies and musicology). From autumn 1951 to January 1953, University of Cologne (German studies and musicology) and piano duo (again with Else Schmitz-Gohr). One year of illness. From January 1954 to autumn 1955, Cologne Hochschule für Musik, solo piano and chamber music with Maurits Frank, music theory. In 1955, first prize for piano duo, together with his brother Alfons, in the fourth German Radio International Music Competition. Autumn 1955 to 1957, pupil of

Eduard Erdmann (Hochschule für Musik, Hamburg). Since 1959, regular activity as concert pianist, mainly as a duo with his brother Alfons.

Since 1962, instructor at the Darmstadt International Summer Courses for New Music; since 1963, instructor at the Cologne Courses for New Music; since 1962, member of the Darmstadt International Chamber Ensemble (as well as public performances with individual soloists from this ensemble: Siegfried Palm [cello], Christoph Caskel [percussion], Severino Gazzeloni [flute]). In 1959 he married the actress Gisela Saur.

Most important premières: Stockhausen: *Klavierstück IX*, *Mikrophonie I*, *Momente* (Hammond organ); Kagel: *Sur Scène*; Pousseur: *Caractères*; in addition, works by Brown, de Pablo and Zimmermann.

Frequent tours in all Western European countries; extensive tours in the Middle East, South and Middle America.

#### RECORDING PRODUCTION

**Tape recording:**  
Phonag AG, Stadthausstrasse 69, Winterthur, Switzerland, commissioned by COLUMBIA RECORDS, New York, MASTERWORKS, Mr. John McClure. Sound supervision and editing: Hellmuth Kolbe (Föhrlibackweg 9, Zurich, Wallisellen). Assistant: Robert Lattmann (Ettbergstrasse 70, Winterthur). Record-

ing supervision: Karlheinz Stockhausen and Hellmuth Kolbe.

**Location:** the large auditorium of the Parish Hall (Liebestrasse 3, Winterthur).

**Time:** July 1, 1965, 10:00 a.m. - 2:00 p.m.: technical set-up, microphone adjustment and test recording; 3:00 - 6:30 p.m.: recorded *Klavierstücke I, II, III, IV, V & VIII*; 6:30 - 10:00 p.m.: edited *Klavierstücke IV, V & VIII*. July 2, 1965, 10:00 a.m. - 2:00 p.m.: microphone adjustment and test recording; 3:00 - 3:30 p.m. and 4:00 - 6:00 p.m.: recorded *Klavierstücke VII* and *IX*; 6:00 - 9:30 p.m.: editing.

July 3, 1965, 10:45 a.m. - 2:25 p.m.: edited *Klavierstücke I, II & III*; 2:30 - 3:00 p.m.: listened to the edited tapes of *Klavierstücke I, II, III, IV, V, VII, VIII & IX*.

November 15, 1965, 10:00 a.m. - 2:00 p.m.: technical set-up, microphone adjustment and test recording; 2:45 - 4:00 p.m.: recorded *Klavierstück XI*; 4:00 - 6:10 p.m.: recorded *Klavierstück VI* up to page 17.

November 16, 1965, 11:00 a.m. - 3:00 p.m.: recorded *Klavierstück VI* from page 11 to end; 4:20 - 3:30 p.m.: recorded *Klavierstück X* to the top of page 8.

November 17, 1965, 10:30 a.m. - 3:00 p.m.: recorded the rest of *Klavierstück X*; 5:30 - 7:45 p.m.: edited *Klavierstück XI*.

November 18, 1965, 11:00 a.m. - 2:00 p.m. and 3:00 - 7:00 p.m.: edited *Klavierstücke X* and *VI*. November 19, 1965, 10:00 a.m. - 1:30 p.m.: listened to *Klavierstücke I-XI*.

A list with all information on the segments recorded, as well as the sheet music with all remarks entered during editing, are in the possession of Phonag AG.

#### Instruments:

For the recordings on July 1 and 2, a Steinway (Hamburg) grand piano was used; Model D, built in 1959, No. 361 880, lent by Pianohaus Jecklin, Zurich. The piano had a definitely hard touch, its dynamics were balanced throughout the entire range and the resonance time was comparatively short, particularly in the highest range. The tone was considerably affected by the relatively high humidity (75%) at 21° C room temperature (rainy, muggy summer weather); it had to be returned frequently (piano tuner: Doldinger, Winterthur).

For the recordings made on November 15 to 17, this piano was not available, as it had been rented to the Zurich Tonhalle for the entire 1965/6 winter season. Instead, the Steinway (Hamburg) grand piano Model D, built in 1964, No. 386 360, was borrowed from Pianohaus Hug, Zurich. This piano had a very soft touch and tone, was not balanced dynamically (volume fell off in the lowest and highest ranges, no brilliance), and had a rather long resonance time. The relative humidity was approximately 50% at an average room temperature of 18° C (because of the excessive heating, all the windows were opened at frequent intervals to keep the auditorium at this average temperature; dry, frosty weather, snow). Several notes had to be retuned

repeatedly; the entire tuning was corrected once on the 16th and once on the 17th; the left pedal made a creaking noise that could only be corrected after several repairs (piano tuner: Wilhelm Baehr, Zurich).

#### Recording equipment:

Microphones: Neumann U 67, Telefunken KM 54, three Sennheiser MD 421s. The *Klavierstücke I, II, III, IV, V, VIII & IX* were recorded with one KM 54 and two MD 421s. *Klavierstücke VI* and *XI* with an additional U 67 under the piano to bring out the bass. *Klavierstücke VII* and *X* with the additional U 67 (as for *VI* and *XI*) used still another MD 421 (cardioid) directly above the piano strings to bring out the long, sustained resonant tones.

#### Recorder:

Studer C 37 Stereo.

Three-channel mixer: Kideltski (Paulex near Lausanne) and Leonhard (Zurich).

Recording tape: AGFA PER 555, high output.

Monitor speaker: KLH, Model Four.

#### Music:

Kontarsky: *Klavierstücke I-IV, V* and *VI*, published by Universal Edition, reprint 1965; *Klavierstücke VII* and *VIII*, a photocopy of the manuscript that had been compared with the UE 1965 edition; *IX* and *X*, photocopy of the manuscript; *XI*, published by UE, new edition (1964).

Stockhausen and Kolbe: *Klavierstücke I - VIII*, published by UE, 1965 edition; *IX* and *X*, a photocopy of the manuscript; *XI*, published by UE, new edition (1964).

Photographs were taken in the recording audi-

torium by Glatfelter, Winterthur, on July 2, 1965 from 10:00 to about 10:30 a.m. and from 3:30 to 4:00 p.m.

Things "with a will of their own" (one of many): During the recording of the eleventh *Klavierstück* on July 15, Kontarsky's every movement caused the stool to creak on the wooden floor. First, the recording was stopped and restarted several times; then pieces of rubber were put under the stool legs; finally, different sorts of mat were procured and put under the stool. Recording started again. Stopped again several times. The stool was taken apart and put back together. Recorded. Again interrupted. Other stools tried: same result. Finally, after about one and a half hours of fruitless effort, a wooden organ bench was found upon which Kontarsky played the rest of the recordings undisturbed. As he started recording again, Kontarsky called through the microphone, "My heartfelt thanks, many thanks, thank you, I'll never forget you! You know, you have to be able to move around for this piece. Thanks, many thanks... fantastic, thank you, gentlemen, thank you!" Kolbe answered over the loud speaker, "But now people listening to the record won't know when you've shifted your center of gravity, Mr. Kontarsky!"

#### Compensation:

During the flight from Düsseldorf to Zurich on June 29, from 8:30 to 10:40 p.m., the Caravelle went through some heavy turbulence, and what was left of the evening meal, which had already been served, was cleared away as quickly as

possible; only Kontarsky, who had refused the "warm-over" airline dinner, kept his Tuborg beer in hand, with the somewhat worried remark that this would be the last decent beer he would get for days. After arriving in the Gartenhotel in Winterthur, he made sarcastic comments in the bar about Haldengut beer, the only brand available, and slept "rather badly" from 12:30 to 8:30 a.m. That morning, he took - as usual - a hot bath and his habitual breakfast with orange juice, a three-minute egg, tea with cream and a roll with cherry jam. Contrary to his habit of talking about books in the most excited tones, telling anecdotes in dialect and commenting on the latest *Spiegel* (news-magazine) stories, he used every opportunity during the days we were recording to dream aloud about past and future gastronomic pleasures. On the day of the first recording session, as a matter of principle, he abstained from all alcohol until 10:00 p.m., drank only an espresso at noon, ate a *filet of perch* with a bottle of Hermiez mineral water in the Gartenhotel at 2:00 p.m., and in the evening in the Hotel Krone - whose cuisine he henceforth praised - consumed a clear oxtail broth, a schnitzel in cream sauce with tagliatelle, green salad with oil and vinegar, Bris with black bread, 1/2 lit. Johannisberg wine and two bottles of Hermiez mineral water. He went to bed early and slept "somewhat better" from 11:30 p.m. to 8:30 a.m. On the following day, he lunched on a glass of tomato juice, a *salimbocca alla romana* with spaghetti, an ice-

cream coffee fleck with whipped cream, 1/10 lit. Johannisberg wine, and two bottles of mineral water; at around 6:00 p.m. he ordered a bottle of Coca-Cola, and for dinner (the kitchen had already stopped serving warm meals) a *Bündner Platte* (smoked country ham) with a tossed salad and 1/4 lit. Johannisberg wine; afterwards at Kolbe's house, he ate a piece of "Mövenpick" ice-cream cake and drank two glasses of cognac; he slept "marvelously" from 2:30 a.m. to 8:30. On Saturday, July 3, he ate steak tartare at midday shortly before the departure, and drank a glass of mineral water.

On the evening of November 14, after landing at Zurich airport, Komarsky passed the time spent waiting for the bus with a Bloody Mary, and in the bar of the Gartenhotel, prepared himself for bed with two Haldengut Pilners as a nightcap. On November 15 at noon, he ordered a salami omelet and High Crown Ceylon tea; in the evening in the Krone Hotel: bouillon with beef marrow, two baked filets of sole, chipped veal in a herb sauce on spaghetti, 1/4 lit. Johannisberg wine, one bottle of Hermiez mineral water and a hazel-nut desert. Then we went to the City-Lichtspiele (a cinema), where during the showing of *Montari* he looked at me from time to time and rolled his eyes; I motioned in the direction of the exit three times, but he remained seated and shrugged with his right shoulder. After the film, he drank two John Haig "Red Label" whiskies on the rocks. On November 16, we went to lunch so late that the Im Silbernen Winkel was

filled to overflowing with cake-eating ladies and he could only order, of the three warm dishes offered, a helping of jugged venison on spätzle (a regional variety of pasta) and a green salad, with a cup of tea with lemon. In contrast, the evening meal in the Schloss Wülflingen restaurant was a minor feast. He consumed a bouillon with beef marrow (incomparably better than the one mentioned above), six helpings of *salimbocca alla romana* (he sent the rice back), another six helpings of *salimbocca alla romana*, green salad; he drank 1/2 lit. Johannisberg wine; there followed crêpes Suzette, together with mocha coffee; and to accompany three glasses of pear schnapps, he chose a "Montecristo" Havana cigar, with an extended commentary on European cigar duties (he praised Switzerland for reckoning duty by weight) and on the preparation and packaging of Havana cigars. On November 17, he closed the recording sessions by composing a lunch: bouillon with beef marrow, sole meunière, 1/2 lit. Johannisberg wine, a pear Hélené, mocha coffee, one glass of pear schnapps and an Upan Havana cigar.

I mention the technical and material details of the recording sessions because I learned from these sessions how much the recording process, playback quality, and even the pianist's playing is dependent on all these conditions. These were the first recording sessions at which I personally had been present, and I was shaken by the extremely artificial situation, the amount of influence exercised by "impon-

derables", and the technical intervention in the musical sphere.

After finishing the score of *Mixtur* for orchestra and ring modulators, I sought flexible methods of composing for the recording process with microphones as well. To do this, the microphone, which until then had been used as a rigid, passive recording device for the purpose of reproducing sounds as faithfully as possible, would have to become a musical instrument whose manipulation could influence all tonal qualities, in other words, an instrument that could autonomously form not only the pitch for harmony and melody in accordance with composed instructions, but also the rhythm, dynamics, tonal color and the spatial projection of the sound.

As my next work, I then composed *Mikrophonie I* for tam-tam and six performers. Several years before, I had bought a large tam-tam for the composition *Momente* and set the instrument up in the garden. Last summer I therefore made a number of experiments in which I excited the tam-tam to vibration using the most varied of objects - made of glass, cardboard, metal, wood, rubber or plastic - which I had assembled from around the house. In one hand I held a highly directional microphone that was connected to a filter; the output of the filter was connected to a potentiometer, whose

output was in turn made audible by speakers. Meanwhile, my assistant, Spek, improvised at the controls of the filter and the potentiometer. At the same time, we recorded the result on tape. The tape recording of this first experiment constitutes for me a discovery of great importance. We hadn't arranged anything; I used as I pleased several of the objects that had been placed to hand, at the same time scanning the surface of the tam-tam with the microphone, much as a doctor auscultates a patient's body with his stethoscope. Spek's reactions to what he heard as the result of our joint activity were spontaneous as well.

On the basis of this experiment I wrote the score of *Mikrophonie I*. Two performers excite the tam-tam with the most varied of materials while two others scan the tam-tam with microphones. A suitable notation prescribes for them the distance between microphone and tam-tam (which influences volume and tonal color), the relative distance of the microphone from the point of excitation (which determines pitch, tonal color and, above all, the sound's spatial impression ranging from far off, echoing away, to very near) and the rhythm of the microphone movements. A third pair of performers operates the controls of a filter and a potentiometer each, and they in turn influence the tonal color and pitch of the structures (by adjusting the filter), volume and spatial effect (by adjusting both filter and potentiometer), and rhythm (by making changes to the two pieces of apparatus in time with the instructions).

In this way, three processes for tonal structuring have been connected: processes that are interdependent and interactive, but at the same time autonomous; processes that have been composed as synchronous or temporally independent, homophonic or with as many as six polyphonic voices.

The score consists of thirty-three independent musical structures that the musicians combine for a performance in accordance with a prescribed scheme. The scheme indicates the relationship between the structures. Three musicians (one tam-tam player, one microphonist and one filter and potentiometer operator) form one group and play respectively one of the thirty-three structures mentioned. At a definite point in time they cue the other group to start with the next structure, this group then cues the first again after a prescribed time, and so on. The relationships between these structures are defined in three different ways: with respect to the foregoing structure, the one that follows may either be similar, different, or opposite; this relationship may remain constant, increase or decrease; and the succeeding structure (which in most cases begins before the previous one has ended) may have a supportive, neutral or destructive effect in relation to this previous structure. Thus the scheme gives three instructions for each connection between two structures. For example, a similar structure is to be constantly supportive, an opposite one is to be increasingly destructive, or a different one is to be less and

less neutral, and so forth. According to these prescribed criteria, then, the musicians choose the sequence of the composed structures that are themselves composed according to such points. Although the relationship between the structures, i.e. the scheme, always remains the same for all performances so as to guarantee a rigorous and concentrated form, the versions of the structure sequences can be extremely different.

*Mikrophonie I* was premiered on December 9, 1964 in Brussels. The German premiere (WDR [West German Radio]) took place on June 11, 1965 with the following performers: tam-tam players 1 and 2, Aloys Kontarsky and Christoph Caskel, microphonists 1 and 2, Johannes Fritsch and Bernhard Kontarsky; filter and potentiometer 1, Karlheinz Stockhausen; filter 2, Jaap Spek; and potentiometer 2, Hugh Davies (Spek and Davies divided these tasks between them as Jaap Spek, my assistant, had to handle the overall control of the rather complicated technical processes). The work is dedicated to Alexander Schlee.

After *Mikrophonie I* for tam-tam, two microphones, and two filters with potentiometer, I composed *Mikrophonie II*. In this work, a synthesis was attempted between vocal and electronic music. In *Mikrophonie II*, the voices are transformed during the performance with the aid of electronic equipment. Twelve choir singers (six sopranos and six basses) are seated in a semicircle on the stage, with their backs turned to the audience (they might also be

seated in the center of the auditorium surrounded by the audience). Groups made up of three singers – three first sopranos, three second sopranos, three first basses, three second basses – each have a directional microphone in front of them. The choir director sits in the middle of the semicircle, facing the audience, and directs the different layers of the work, which is polyphonic throughout. Beside him is seated a timekeeper who, with suitable gestures of his hands, indicates to the choir the duration of the thirty-three musical moments. Behind the choir singers and on a higher level there is a Hammond organ with the organist sitting facing the audience. The technical principle of this tonal composition is as follows: the four microphones are individually connected to four ring modulators, to which the electrical output of the Hammond organ is likewise connected. These devices modulate the sounds produced by the choir singers and the tones of the Hammond organ in such a way that the input frequencies are suppressed and the output is composed of the sums and differences of these input frequencies. This produces completely new tonal spectra with unusual, subharmonic colors.

The different types of music modulate each other. Transformed sound is produced only when both organ and choir produce sound at the same time. The sound mixed in the four modulators is then put through four potentiometers whose outputs are connected with four groups of speakers. The speakers are placed

on the stage behind the choir, and thus the original sound of the choir and organ is mixed with the modulated sound that simultaneously comes from the speakers. At the premiere in the large radio-network studio in Cologne, I operated these potentiometers from the gallery. I was to turn the four speaker inputs up or down as directed by the score, and I could influence the mixture between natural and transformed sound. It is important to me for the sound of the choir in *Mikrophonie II* to be transformed in different degrees, and for untransformed layers to be mixed with more or less transformed layers, often simultaneously, or for there to be transitions from natural to artificial sound and vice versa. In contrast to purely electronic music, a piece like *Mikrophonie II* offers a greater opportunity to compose on a scale ranging from natural to artificial sound, from familiar (nameable) to unfamiliar (non-nameable) relationships. One of the most important reasons for pursuing such sound compositions – as with all new music, especially electronic music – lies in composing a unique, unmistakable world of sound for a work, and in giving no further support to the old dichotomy that states that, in composing, it is not primarily a question of the "what", the material for example (in this case, the sounds of the choir and organ), but only of the "how", of the way one composes with such sounds. In a work such as *Mikrophonie II*, the "what" can in no wise be separated from the "how". I would never have composed the way I did if the "what" had not

had quite specific qualities particular to this work, qualities which led to quite definite types of the "how". For example, one must compose quite specific types of structure when using ring modulators: the superpositions must be kept as simple as possible, many notes held on, with the layers transparent and not too fast, because the ring modulators make very dense, symmetrical spectra from simple sound processes, and this can easily lead to a predominance of noise or to a stereotyped articulation of the sounds.

The notation in the score was changed many times in the course of the work, mainly during the rehearsals, as some of the interactions between natural and transformed sound were unpredictable. The final result was a score that enabled each individual choral singer and the organist to react to the others, according to the context. Unusually high demands were placed on the singers. Not only did they have to be able to sing well, but based on my instructions, they were themselves required to invent melodic, rhythmic and dynamic articulations in various variations. The organist had to decide from the context on the time and degree of electronic transformation by setting the potentiometer. For example, I might give the instructions for a musical moment of 114 seconds as follows: the three high sopranos are to sing, pianissimo, their middle-register C-sharp very slowly, with irregular durations, continuously and synchronously, changing at will the number of simultaneously singing

voices; starting with a "solemn Levitical tone", gradually changing into "sexy, seductive, with small glissandi"; they have the text "die Lage, in die ich gekommen bin, ist die Lage, in die ich gekommen bin" (as text, by the way, I used *Einfache grammatische Meditationen* by Helmut Heisenbüttel). At the same time, the second sopranos sing, on the average, mezzo-forte, and individually (that is, in polyphonic association); starting syllabically, they sing melody groups around a low D-sharp in a tonal space limited by their highest and lowest note; they are to begin in slow triple measures and sing "like a baby"; then, after accelerating gradually, they sing mixed (melismatic and syllabic) melody groups in quick four-four time with the instruction "in baroque invention style"; after a gradual *rallentando* they sing in slow four-four time, mixed syllabic and melismatic, "somewhat hoarse à la jazz, slow", ending synchronously (one singer beats time for all three); the text for this layer is "Rede überquert Rede, und es gibt es nicht". At the same time, the first basses sing individual chords mezzo-forte or forte, very slow, at irregular intervals (which one bass directs); the tones change individually with each syllable varying between low D and G-sharp, with the instruction to articulate "like drunks, raucous at times"; they have the text "gesprungene Nachmittage und gesprungene Nachmittage". The second basses sing, with crescendos and decrescendos, synchronously, quick tone-groups with prescribed numbers of notes, with

long pauses of different length between the groups (here, too, one bass directs) and with long fermatas at the end of the individual groups; the pitch around a low G-sharp varies individually, syllable for syllable, between D and one-line E; they are to begin "à la jazz, cool, fast, like plucked basses" and gradually go over to articulating "like an affected snob"; as text, they use the syllables "oder und oder oder". The organist is instructed to play slowly expanding and contracting clusters of held notes around two-line F-sharp, sometimes with vibrator; in addition, he is at times to play quiet, polyphonic melody groups around one-line D-sharp, quiet at first, then increasingly with small dynamic changes; meanwhile – using the stops on the Hammond organ – he is at times to change the timbre slowly in the direction from dark to light and back to dark, always playing with pure tones; at the same time, extremely slowly and periodically, with interruptions at times, he is to play, with a long-decay stop and reverb, single staccato pedal notes between low G-sharp and D.

A lively interchange between all the performers can result from this type of notation – using words and few written notes – for the singers and organist, provided one is able to find inspired musicians like those who rehearsed *Mikrophonie II* for its Cologne premiere, and, above all, a choir director like Herbert Schernus. The sopranos were: Mimi Berger, Meta Ackermann, Frigga Ditmar, Ulla Terhoeven, Helga Hopf and Monika Pick; the

basses were Arno Reichardt, Dietrich Satzy, Hermann Steigers, Peter Weber, Friedrich Himmelmann and Werner Engelhardt. The Hammond organ was played by Aloys Kontarsky. Johannes Fritsch was the timekeeper. The choir leader, Herbert Schernus, rehearsed the choir and directed. This is the recording of

the premiere, from a public "Music of Today" concert of the West German Radio in Cologne given on June 11, 1965. The work is dedicated to the American, Judith Blinksen.

Karlheinz Stockhausen  
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