

42 - Availability of scores. Ali Cage's work may now be obtained through Peters' Edition (with some delay). His *Winter Music*, on the other hand, can be viewed immediately in the magazine *New Departures* 2/3, obtainable from Otto Schmink, 57, Greek Street, W. 1.

A selection of Bussotti's works has been published by Universal Edition (signed copies are more expensive), from whom Stockhausen's *Requiem* may also be obtained, if not now, then in the near future. *Carré* on the other hand - which is a work for 4 orchestras and 4 choruses under 4 conductors and lasts 35 minutes - is unlikely to be available for some time.

Isolated pieces by Wolff and Feldman have appeared in the American 'New Music Publications', which may be borrowed from the library of the American Information Service. Feldman's *Piano 3 Hands* may appear shortly in the Leeds magazine *Accent* together with my comment on it.

My *February 1959* appeared in *New Departures* 1 which is now a collector's item, but *February 1960* is to be found amongst the *Darmstädter Beiträge zur neuen Musik 1960* which is obtainable, at a price, from Schott's Music Publishers.

London v. '61

[Editor's note: The illustration used in note 41, above, is a facsimile of Cardew's ownhand. Copied c. 1961 (presumably) from a draft version of *Tivo Pianos* (1957) as presented by Morton Feldman. There are differences to the later published version (1962). The printed version has no bar lines and varies in other minor ways.)

Report on Stockhausen's 'Carré' - Part 1

The Musical Times - October 1961

Stockhausen's *Carré* for four orchestras was performed in Hamburg on October last year (1960). In this article Cornelius Cardew describes his experiences while collaborating with the composer on its creation and execution.

The theoretical possibility or impossibility of collaboration in composing a musical score... Of what interest are such theoretical possibilities or impossibilities? Examine the reasons of the parties involved in any particular case of collaboration. But how many such cases are there? Well, imagine some.

When I was actually involved in the collaboration with Stockhausen on 'his' *Carré* (for four orchestras, four choruses, four conductors, four sides of the room) I spent some of the afternoons when work on it seemed pointless, thinking of possible or sensible forms that a collaboration could take. The idea that most took my fancy ran somewhat as follows: one, or each of the composers concerned would write some music of a casual nature (i.e. not completed or closed, but with casual indications of dynamics, instrumentation, notes, phrases, perhaps a few bars sketched) and post it - this was an important aspect - to his or her collaborators. All verbal comments would be avoided, except those usual in the notation of musical ideas (eg. 'Hut!', 'crescendo', 'full orchestra without percussion' - and this last not necessarily supplemented by a list of the 'full' orchestra or of the omitted percussion).

On receipt of this material (which I romantically visualise as a dirty piece of manuscript paper), the other collaborator proceeds to comment upon it, musically. He may add, change, modify, oppose, protest, destroy, restrict, embroider, etc. He then sends the whole - the original material together with any supplementary sheets - back to the first composer. I felt that neither composer should keep the material for more than a couple of days at a time, and that the process could continue for as long as was necessary or desired. An end to the process could be formalised as follows: when one of the composers returns the material without having done anything to it, the other may take this as a sign that he is to complete the score, i.e. make a performable score of it. Or they may duplicate the material and each make a performable score, thus making two, or as many versions of the piece as there are collaborators.

I still find this idea feasible, and would embark on it with anyone who cared to collaborate with me, though I cannot answer for the results. And it is this which indicates the great merit of the idea, that it is *dilettante* and entered into with free

love and acceptance of no matter what eventuality - like abandoning the project, or shooting your collaborators, or never finishing it... all of which are impossible when the work in question is a commission.

* * *

My collaboration with Karlheinz was, on the one hand, an expression of his altruistic desire to help me personally, and on the other, his solution of his problem of having more commitments than he could accomplish single handed. *Carré* was commissioned by Radio Hamburg, and was conceived during Karlheinz's long flights over North America while he was lecturing there. I had spent February and March at a loose end in England, writing *February 1959* in odd moments, and making my final comment on my studies in electronic music in an article called *the unity of musical space*; returned to Cologne in April with an open mind and a work hungry spirit; and found a whole heap of more or less hieroglyphic notes, including 101 snappy items of the same general form as Example 1 (which I have freely invented, no longer having access to any of the material of *Carré*). These I proceeded to realise, working daily chez Stockhausen from 3pm until dinnertime, aided, irritated, confused, encouraged, and sometimes even guided by his own eagle eye, or his voluminous notes, or his random narrations as he worked on his experiments for what later became *Kontakte* (for piano, percussion, and four track track tape).

Example 1 The sign on the right shows the memem between the orchestras. 9 is one of 12 dynamic levels. Dot means this note staccato or very short, slur sign very long. Pitch and rhythm are the elements to be brought into play during this group.

At the end of three months or so, during which I also wrote my *Ociel* 1959 and learnt the guitar part of *le Marleau sans Mailre*, a rough score had come into existence; I had an obscure idea of what the piece would be like, and Karlheinz's more whimsical notions about the piece had been abandoned, and all seemed set, when, on the eve of my return to England, Karlheinz sprang the idea of the 'insertions' (episodes outside the general run of the piece - at this stage they had very little in common with what they eventually became) which were to delay the completion of even the rough score until March 1 1960, when I finished the last page (containing 3,000 odd notes) of the last insertion (comprising ten or so such pages) in a sun filled library in Amsterdam.

The 'story' of this piece is longer and more harrowing than the 'story' of any other piece I have written. Which says something about its value. Like the Viennese painter who remarked - very pleased with himself - to a critic, 'Yes, a lot of work went into that picture.' 'Well isn't that just too bad,' was the reply, 'because none of it is ever going to come out again'.

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The score of *Carré* is four scores, one for each orchestra. So the score *Carré* 1 consists of the first orchestra written out in full, and above, reductions of the other three orchestras, each on two staves. Thus none of the scores can give a really detailed impression of the sound, and a total view of the piece is very difficult to achieve at all, except in performance. This was perhaps one of the reasons why the question cropped up as to whether or not the 101 groups like Example 1 could constitute a sort of score for publication. David Tudor was of the opinion that they could; so was I; but Karlheinz on the other hand would probably oppose the idea strongly. This score, if published, would be the score of a piece for four orchestras by Karlheinz Stockhausen and no mistake about it. For a performance, some would have to 'interpret' it (just as I did, with differences which we will mention later) into a proper performable score. If there were several such interpretations and performances, comparison of these would enable an earnest critic to distribute his blame between the composer (Stockhausen) and the realizer.

Let us look for manifestations of personality in the piece. There are doubtless many in the Basic Score (comprising the 101 groups as in Ex 1) which label it incontrovertibly STOCKHAUSEN, but these manifestations are in the Basic Score, and not necessarily in the Final Score. That is to say that were the realizer to approach the Basic Score with sufficient boldness, these manifestations could

become insignificant - intentionally concealed, or unintentionally ignored. I, for one, would certainly now approach the task in (his fearless spirit, and allow my imagination to act unconditionally on the material of the Basic Score. I would hazard the opinion that it is lack of faith in these manifestations that would lead Karlheinz to oppose the release of such a score. ('Release' is the right word: the score leaves your hands, and *anything* may happen to it. But then, you could reserve the right to veto performances, if you felt that way about it, and you could appoint executors in cases where you, personally, were not able to do so).

Cage, Wolff, Bussotti - to name but a few who do release basic scores, though of different sorts - do have this faith. 'But if there is a way you want it to be, write it that way' (as composers of indeterminate music who complain about performances of their pieces are often told), and I think Karlheinz does want his music to be a certain way, and it is as a result of this that he has constantly exerted his personality in coaching performances of his works (indeed performances in which he has had no hand have been exceptions; even the Glasgow performance of *Gruppen* was modeled on a tape-recording of a performance in which Stockhausen was the principal conductor); thus he had evaded the necessity of finding an adequate formalization of his ideas.

It is in this role - that of breathing down the performer's neck - that you find him exerting his personality in *Carré*; his advice to me while working on the Basic Score, his copious notes and hieroglyphics accompanying the Basic Score, his elucidations of the signs used in the Basic Score, there were the strongest manifestations of personality in the complex process which we loosely term *Carré*. And in fact I did work at the score all the time keeping his intentions in mind, though my own 'personality' tended more and more to interfere as the work progressed. The sections which were finally cut in the performance were either ones in which my personality conflicted with his - or seemed to - or ones which manifested virtually no personality at all (an unusually ideal state of affairs, and hard to come by, in my opinion), i.e. some sections near the beginning where I would not yet have conceived of interfering and where he had failed to manifest his intentions in such a way that I could appreciate and act upon them. But generally our personalities interacted freely, and with much friendly discussion.

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Now something about the *musical* basis of the collaboration. When we met in April 1959 we discovered that we had both written cyclic pieces, i.e. pieces in which you can start anywhere (in his *Zyklus* for one percussion player, on any

page; in my *Irnbuury I'*'), will any given element join the end to the beginning. Both pieces present a cyclic recurrence of elements: certain sounds or tones recur at regularly increasing or decreasing intervals, and then back - like a simple harmonic curve. In both pieces a number of these cycles overlap, and the form is characterised at any given point by whatever element is passing through its density peak at that moment. One major difference between the pieces was that he used a notation in which space corresponded to time, and he was thus able to plot the recurrence of elements as logarithmic series; whereas I wished to dispense with the measurement of time in this sense. I used neither a number of beats nor a number of seconds for measuring the recurrence of the elements, but a number of musical events. The length of the musical events was determined by the condition of the sounds themselves (e.g. a tone would last as long as it took to decay from *f* to *mp*, etc), combined with a few relative indications like long, short, etc. Thus, whereas his elements would recur after 3,2,1,2,3 units of *linie*, mine would recur after 3,2,1,2,3 units of *music*, or musical elements. I had naturally feared this was a new idea (as it may well have been a new idea to use it systematically), and so was overjoyed to find the whole of *Carré* laid out in this manner - each group like Ex. 1 can be considered a musical event in this sense.

But instead of being cyclic, the recurrence of elements in *Carré* was generally straight-line, so that any element (each sign in Ex. 1 can be considered one of a class of elements) would occur more and more frequently up to a climax (of this element), and any climax of this sort heralded a structural shift; a new element would be introduced and perhaps this new element would start at its maximum frequency of occurrence, and thereafter decrease in frequency until it faded out altogether. (I am giving no indication of the actual structure of the piece - only of the type of structure). So this aspect of the piece afforded me personally considerable interest, in spite of the shaping of the individual musical events in themselves.

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The instrumentation. The selection and distribution of the instruments had me slightly worried. First, it was irritating to have to write for an instrument that one has never consciously heard, like the cimbalom (Hungarian dance music, Stravinsky's *Renard*); one has constantly to refer to a diagrammatic picture of the instrument to find out what is playable and what is not. Second, Stockhausen's insistence on equal numbers of brass and wind instruments (four brass and four wind in each orchestra); I prefer a more conventional balance. And then the

choice of wind instruments; instruments like E fiat clarinet and double bassoon were vetoed as unnecessary - and it is true, the whole piece does unfold within aspace of 4'/J octaves, with only occasional excursions, forwhich Karlheinz was not responsible. But I felt ihat instruments ofextreme timbre and range could have helped to rectify the unbalance caused by equal numbers ofbrass and wind. Later, I came to enjoy the limitations involved in using only instruments with fairly centrally placed ranges, especially in their extreme and characteristic registers; but that was after I had worked off any disappointment on the instrumentation (piccolo, alto flute, oboe, E fiat clarinet, bass clarinet, double bassoon, violin, double bass) of my own *Octet 1959*.

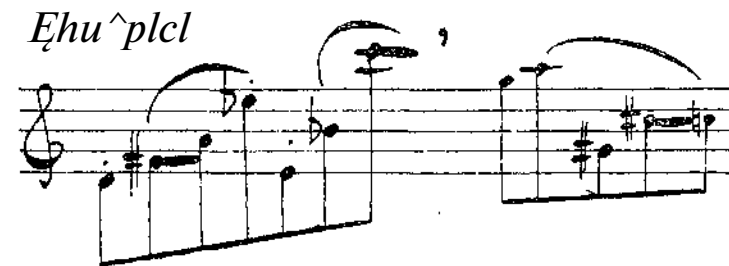
With the brass, Karlheinz was more liberał; a high F trumpet, bass trumpet, alto trombone and tuba were all featured. The strings lacked all initiative: a 2-2-2-2 combination was used in each orchestra - no basses, and this was, I think, one of the causes of a certain lack of orchestral bulk which prevented the four conductors from sustainingthe necessary rapport, so widely separated in such a large hall; a slight wrongness of scale which kept each orchestra distinctly a chamber orchestra, but within a situation that definitely required a really big 'orchestra.' An orchestra which can provide 16 brass (6 were horns), 8 percussion players and, among the wind, 3 saxophones and 3 clarinets, can surely boast more than 32 strings! The 8 percussionists were my greatest worry, since I have but little penchant for *the* sounds. In the rough score, i sketched their parts vaguely simply, mechanically and minimally, assuring myselfthat Karlheinz would brush them up when he came to correct the finał score. This he never did, or only in a very few cases, and so the percussion parts retained their simplicity, and were finally completely appropriate and unobtrusive almost all the time (they play incessantly).

Piano, harp, cymbalom and vibraphone completed the orchestra - he referred to them as 'attack instruments', and they were used chiefly to colour the entries of other instruments, and only occasionally achieved independence - and had all else been equal, these would have been sufficient to characterise the four sides of the hall, aurally. But all else was not equal; the four orchestras were not identical, but they were not *significantly* differentiated. And it would have been so easy to have made them either the one or the other.

One word about the clapping, finger snapping, tongue clicking, phonetic mouthing chorus (2-2-2-2 in each orchestra): I wrote their notes and Karlheinz their nonsense, later laboriously copied according to the rules laid down by the International Phonetic Association. They were one of the liveliest features of the generał sound, and sang beautifully at the performance.

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The notation. Stockhausen's original idea for the notation was to have lines c twelve different thicknesses, representing twelve different loudness levels. These lines were to be prolonged in correspondence to the durations of the sound: and would wander about over the stave in cases of *glissamio*, and get thicke and thinner in the event of a dynamic change (*res. dim.* etc). Thus, the three essential aspects of any sound - pitch, loudness, duration - would be welde into a single sign with three corresponding features - placing on the stave fc pitch, thickness for loudness, length for durations. The weightiest objection t this was the fact that were we to rhoose twelve *nppreciable* differentiations c thickness, the stave would have to be so large that the height of the total scor would have come to something like four yards. And the incredible labour involvec even were one to develop such long arms: using the Graphos pen -- which drie up if you dream even for two seconds (and it would take you longer than that t walk round to the other end of the score) - constantly changing between twelv different sized nibs.



In the rough score I used the numbers 1-12 for the dynamics, and these wei reduced in the finał score to *pp, pf, ff*, much to my relief. (Even after reachin this decision, the decision to write the four scores separately was still a force one). The prolongation of the lines was retained, to accommodate the frequer *glissandi*. Where fast passages were required, these were written as quavers, wit sundry rommas, dots, and short lines to indicale the rhythmic profile (Exampl 2). The rapport between conductors and players, and (he timing (no metrics an no stopwatches) were laid out generally as follows:

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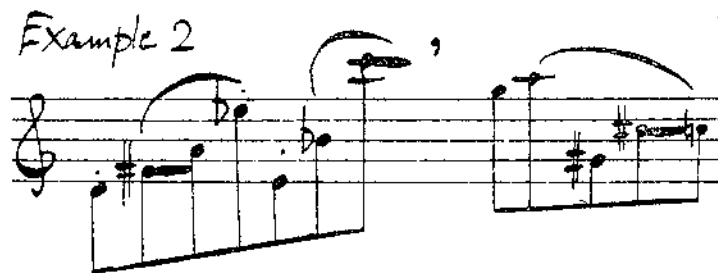
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In the rough score I used the numbers 1-12 for the dynamics, and these were reduced in the final score to *pp*, *p*, *f*, *fff*, much to my relief. (Iiven after reaching this decision, the decision to write the four scores separately was still a forced one). The prolongation of the lines was retained, to accommodate the frequent *glissandi*. Where fast passages were required, these were written as quavers, with sundry commas, dots, and short lines to indicate the rhythmic profile (example 2). The rapport between conductors and players, and the timing (no metrics and no stopwatches) were laid out generally as follows:

Most significant changes in the sound were to be brought about by a sign

from the conductor. To avoid the confusion that would result if all these signs were down beats, they were grouped in 2,3,4 or 5, making up 'bars' with beats of irregular length. These irregular beats were written as relative lengths on the page; thus the first beat could be short (1 cm say), the second long (say 8 cm), the third somewhere between the two (say 3.5 cm), the fourth a little longer than the second (say 9 cm), and so on.

Each group was thus divided into irregular lengths, and over the whole group was written a time (say 24") decided on by Karlheinz and myself empirically, by mentally 'hearing' the group a few times, timing it each time, and taking the mean time of the various times we had timed it. The conductor can repeat this process: he can interpret the varying lengths by eye, and check his time against a stopwatch, and if he finds he has taken too long, he can 'correct' his timing. But we decided on these numbers (times) *after* writing the music, so I could never really regard them as binding (they were not composed), and I personally would have liked the conductors to have felt free to ignore them in all cases except those where they actually found they had to refer to them in order to get an idea of what the music was about.

I found this sort of notation - anti-beat, with no metrical drive - almost ideal for the conception of *Carre* as we have already mentioned, Karlheinz conceived the piece in the hours spent flying over the USA during his lecture tour there. Sounds 'at peace', which last and last and do not change, or change suddenly and briefly - this was the general idea, or one of them. I enjoyed this general idea very much, and in actual fact, while composing, I would often write 'a sound' and gaze out of the window at the summer afternoon gardens 'listening' to it for 10 to 20 minutes, and not just the 12" or whatever it might be that was actually audible in the concert hall.

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Conducting procedure. Each conductor stood with his back to the wall, and where two or more of them had a beat in common, they were to agree on this by looking at each other. The musicians received signs with which they were perfectly familiar, namely a 1st, 2nd, 3rd, 4th beat of the bar; and every sign was accompanied by an acoustical occurrence - a change in the sound; so there were no empty beats. A synchronized attack is one of the problems presented by the absence of a pulse; how can several instruments enter together when they have no reliable and common means of predicting the advent of the next beat? This was easily solved by prefacing each beat with a short up-beat of a constant length.

Report on Stockhausen's 'Carré' - Part 2

The Musical Times - November 1961

In part 1 of this article, which appeared last month, Cornelius Cardew described the conception, planning and composition of Stockhausen's *Carré* for four orchestras. This month he deals with the 'insertions' (added episodes outside the general run of the piece), and the way the work was brought to performance.

Let us now talk about the 'insertions', for it is these that constitute the exceptions to the temporal concept and technique outlined last month. In the insertions, Stockhausen intended that 'space' should emancipate itself; and the sounds' movements in space should be their chief feature. Our main problem - chiefly because it was the most predictable one - was that the sounds would always proceed by jerks around the room, for between each orchestra there was a considerable space.

The problem has also cropped up in the course of Karlheinz's work on *Kontakte*, and he found a sort of 'ideal' solution which did not actually produce very satisfactory results in the 'laboratory experiment' performed by him at the Cologne radio station. This experiment consisted in mounting a revolving loudspeaker in the centre, and placing four microphones, each recording on one track of the four track tape recorder, around it. The 'signal' (sound) was then relayed through the loudspeaker, which mechanically spun at various speeds. I had calculated that the signal would be constantly 'audible' to all four microphones, but would achieve 'presence' only when the speaker was directly opposite the microphone. Thus the dynamic curves and intensity levels of the rising and setting sounds (in the land of perpetual sound, for at no point is the sound inaudible to any microphone) - which would be impossible to plot synthetically - could be recorded directly. As I said, the results were none too satisfactory, though some were usable.

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This may be a similar case to that proposed by Norbert Wiener (I quote from hearsay), where 'a Man' is recorded - cell structure, electronic impulses, everything you can think of, all fed into a computer, which records and stores the 'information' in a fraction of a second, and can transmit it in the form of radio waves. Thousands of miles away, the converse machine collects this 'information' from the ether, and recovers it into 'a Man.' (I forget what happens to the original man; perhaps the machine actually 'takes him apart' for the purpose of recording him). 'Cell

structure, electronic impulses, everything you can think of...', but who can think of everything? And I find myself posing the same question with regard to Karlheinz's experiment.

The movement of sounds in space is largely a psychological phenomenon; the problem is to create the illusion that the sound source is moving - easy for the stereo record engineers, harder with live performers. I found this illusion most successfully accomplished by careful music blending, in cases where similar (in timbre and notes and dynamics) sounds were painstakingly handed over from one orchestra to another. Your attention 'wanders' across the intervening space in the time when both orchestras are playing the same sound. But in the insertions it was intended that the listener should be caught up in a sort of hair-raising sound spin. Insertion 69X, for example (since these insertions were *outside* the general run of the piece, 'extras', I called them X, and indeed some of them are almost unsuitable for kids under 16), is laid out as follows:

A soprano D (a ninth above middle C) is passed around the four orchestras at the rate of 12 changes per minute - each chorus sustains it for five seconds plus one second after the next chorus has taken it up. Simultaneously, the strings and woodwind revolve in the opposite direction at the rate of 60 changes per minute. This is an agitated flimmer, /as opposed to the *pp* soprano D, and moves over the pitch range, sometimes haunting the high spots and sometimes the medium or low, or distributed over the whole range but with a density emphasis moving from high to low. Soon all the percussive instruments (harp, piano, vibes, cymbalom) enter simultaneously with an extremely sharp/f chord, and the flimmer becomes a murmur and this dies away.

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There are a number of interferences like this, and each indicates some significant change in the excited flimmer of strings and wind: they reverse their direction and turn clockwise instead of anti-clockwise, or they double their speed to 120 per minute, or they all cluster into the high register, etc. In the end the revolutions lose momentum, become hesitant, proceed by jerks, and the flimmer is relegated to the beginnings of the sounds only, and finally just the sopranos are left. The D ceases to revolve, and the orchestra in which it has 'landed' proves to be the site of the quiet brass chord - sustained under the sopranos - that introduces the next group of the piece proper. Throughout this drama the cymbalom (in the third orchestra - behind the audience, as I had imagined) plays a virtuosic cadenza corae rain come shine.

It can easily be seen that such an event lends itself ideally to a metrical notation: the revolutions are regular, and each orchestra plays one 'beat' out of four, and this is actually the way it was conducted - in 4/4, and 4/8 when the speed is doubled. But instead of using note values, all the music was written as 'breaks', articulated as in Ex. 2, which had to be approximately fitted into metrical schemata. This makes for an agitated, unprofiled sound, forming a perfect contrast to the rest of the music, which though non-metrical, gives a completely 'measured' impression.

The same is true of Insertion 82X, which is laid out on much a grander scale. Here the orchestras enter one after the other and play ferocious cascades in which everybody takes part, descending from their highest to their lowest registers. This too revolves, but with much more overlap, so that the first orchestra has reached its low register just when the fourth orchestra is starting its descent. As the intensification process leads to each orchestra in turn having blocked chords while the others continue their melodic cascades. This ceases abruptly, and discovers a *pp* finely differentiated whisper from the strings. This is a technique that crops up quite a few times. Stockhausen calls them 'windows' - the sound is opened - the barrage or screen taken down - and exposes the view beyond; this view can then also be 'opened' and something shown behind that again.

82X is written in much the same way as 69X, but the musical content is different. The group presents a gradual transition from the melodic type of articulation to a chordal texture. This transitional process goes through all sorts of spins, in different directions and at various speeds, until finally space becomes submerged in a chaotic chordal chopping. It seems to be something other than sound that emerges from this total immersion in *fortissimo* attacks at the rate of about 60 chords per second. This stops abruptly leaving the four choruses alone *pianissimo* - one listens with a sort of drugged passivity and relief - who wanders around in close harmony for a while before the next group begins.

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I say 'relief speaking for myself alone; one of the beauties of the piece - leaving aside the insertions - is that virtually nothing can go seriously wrong; all is relaxed and beautiful, and each musician is free to devote his attention to the production of a good sound. But in the insertions, the slightest lapse of attentiveness can have disastrous results; embarrassing gaps appear in the 'spin' - and these are very noticeable - or you hear one player after all the others have stopped, an because there is such a row going on, you can be sure that he is playing in a moi slap-dash manner, without any of the distinction which could make such a

exposed mistake worth listening to.

But there are doubtless many who **would** have preferred the whole piece to have been like these incisions, and indeed one can imagine that the memory of them is the only thing a great many people took home after the concert. For the insertions are certainly the most 'sensational' aspects of the piece - and they are furthermore what one would expect of a new piece by Stockhausen for four orchestras, so they would be accompanied by a certain experience of fulfillment. And it is a romantic therapy for the modern luxurious listener to be dragged round the city walls by the ears, by proxy.

I came to Hamburg for the start of the rehearsals (ten days before the performance) in some obscurely fabricated supervisory role. Such a performance is inescapably un-supervised, and if I achieved nothing in shaping the performance, I certainly did not achieve less than Karlheinz (except in his role of conductor, of course) unless his somewhat drastic last minute cuts can be considered an achievement in this direction. This cutting session, with only one day of rehearsals to go, was the nearest thing to a Hollywood 'story conference' that I have ever experienced.

Michael Gielen, Andrej Markowski, Mauricio Kagel and the composer - the four conductors - sat, score in laps, armed with thick blue pencils, murmuring the occasional futile objections to Karlheinz's imperious "cut..., cut...", the while imbibing Scotch (it is Karlheinz's irrepressible habit to lavish his total fee on expensive meals and drink for all and sundry before and after a performance) and strong Russian (Hamburg) tea by turns, while David Tudor and I - the passive participants of this conference, for we had no scores and nothing but 'cut..., cut...', to tell us what was going on - got quietly stoned each in his way, David on tea alone. I went home to bed murmuring histrionically phrases like 'there go the piece's last chances of coherence', and 'so much the less music,' and I was gratified the next day when musicians were heard to sigh and say such things as "but we played that bit so beautifully," referring to some particularly poignant cut.

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Indeed, the majority of the musicians showed a remarkable amount of good will. They soon came to terms with the un-conventional aspects of the notation (there was a near panic when it turned out that the parts for one orchestra were almost illegible and that some of the parts were missing. The staff copyists at the radio had never seen anything like it, and finally Stockhausen and I had to do most of the fresh copying) and rehearsals progressed smoothly through all possible

combinations of instruments: strings alone, brass and wind, brass and strings, wind and percussion, etc. The most successful rehearsals were those just before the four orchestras met. Each orchestra on its own - a chamber orchestra of 26 or so players - rehearsed in turn in the (relatively small) concert halls at the radio, and it was marvellous to hear every detail of the individual scores played with great clarity, confidence and precision. Balance was perfect, and all the players so attuned to one another that the most remarkable blended sounds were produced without any sensation of strain. It was when we moved to the big hall of the 'Planten & Blomen' that the real difficulties began.

It was a sort of exhibition hall - a large square hangar, fitted up with a multitude of loudspeakers (for the first half of the concert was to consist of electronic music) and four cubicles for the separate recording of the four orchestras, and a fifth where they were to be mixed. My job was supposed to be flitting among these cubicles adjusting the balance of the four microphones for each orchestra, and then the balance of the four orchestras together in the fifth cubicle, meanwhile running out into the main hall every few seconds to give detailed instructions as to who was too loud and too soft, and too early and too late, among 108 musicians, who were - to increase the difficulty - invisible and unreachable from the cubicles - and all this carrying a heavy armful of four full scores each opened at the right page. But what happens when you want to turn a page... ?

I gradually realized that the piece was leading its own life and that the best thing to do was to sit back and listen. The chief difficulty was this: when one orchestra was playing - however quietly - its conductor could hardly hear anything of what the other three orchestras were doing. Consequently, each conductor was constantly requiring the other three to give more; particularly, they were concerned about 'signals' from the other orchestras, cues for the entries of their respective orchestras. So yelled consultations would ensue (which were trying for nerves throats and lungs) despite the individual microphones and loudspeakers at each conductor's elbow, by means of which they could converse normally over the long distances involved. Somehow this was a psychological impracticability: the yells persisted, the conductors too, and the result was that the balance of each orchestra individually (this was the only balance that mattered; the balance of the four orchestras was uncontrollable and irrelevant since the audience was spread over the whole of the enclosed space) went to pieces in many cases.

Another difficulty - and this was also a difficulty with *Cntppen* - was that when four conductors have constantly to refer to one another, and watch each other for cues, and make beats come together, they have that amount less time

to concentrate on the performance of their orchestras; the playing is apt to revert to its original shape of untidiness. Cottle this with the fact that there is a time lag in a hall of that size, and that the conductors were the most widely separated people in the whole hall, and the reader may imagine something of the depressing process that set in as soon as all the orchestras started to rehearse together. The piece started to fall apart even before one had put it together, and it would have required great presence of mind (and courage) to avert this disaster by the sweet and reasonable method of each orchestra quietly getting on with its own business, and letting the total impression take care of itself.

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The thing that makes coherent performances of the monumental works of the past possible is the unshakable conviction of the validity of the composer's indications. This enables the conductor to rest assured that if he unpacks the piece with sufficient care and respect, the present will be discovered inside, intact. With *Carre*, it seemed that not even Karlheinz was convinced of the validity of the indications in the score, and was therefore more inclined to lay down the piece like a law; and arbitrary law, easily disfigurable by heavy-handedness. I do not pretend that it would have been easy to let the piece play itself - to *assist* (a complex and imponderable mingling of active and passive functions) at its birth or self-demonstration or what you will - but I think it would have been rewarding. The described situation led 'naturally' to the cuts, and also to a frequent embarrassed hastening away with groups, getting them over with, a 'now for heaven's sake let's get on with the story' sort of feeling. Many groups - even where there were no cuts - were reduced to less than half their planned lengths, so very little (or let's say much less than I would have liked) remained of the perfect stillness of the original conception. There was very little of the air of hours of flying high above the North American clouds, which the programme note had been so kind as to mention. I am of course offering only my own personal and prejudiced and exaggerated impression when I say that the life of the piece was *nurtured* up to the point when each orchestra was rehearsing separately, in the concert hall and rehearsal rooms of the radio, but that thereafter it was *bullied* into an atavistic maturity, realizing only a fraction of its musical potential.

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The audience finally sat in four triangles, backing onto the four orchestras and facing towards the centre, so that the places in the score where I had actually imagined the sounds as in front of, or behind, or on either side of the listener, or sounds which were to move from behind the listener to his right hand side, etc. went by the board except for one quarter of the audience. But this fades to irrelevance when one remembers that theoretically - equally irrelevant - there is only one ideal spot for the listener, i.e. equidistant from each orchestra - and actually no one sat there because it was occupied by the control panel for the electronic music in the first half of the concert. As I mentioned, the concert was broadcast on VHF, and consequently reached only a small public of interested listeners who lived within a distance of thirty miles of Hamburg Radio. In spite of a formal request that the audience should remain quiet for the announcer to announce the end of the broadcast, he was unable to do so - prolonged cheers, cat calls, boos and clapping drowned him almost completely - and I believe the closing announcements had to be broadcast from a studio. I sat in a cubicle and bit my nails.