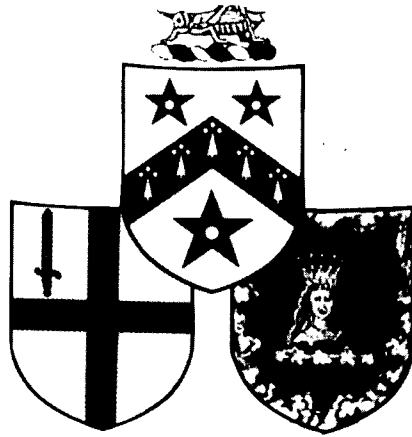


*G R E S H A M*  
**COLLEGE**



**LE TOMBEAU DE MESSIAEN**

Lecture 2

**STOCKHAUSEN AND *MANTRA***

by

**PROFESSOR STEPHEN PRATT BA BMus**  
**Gresham Professor of Music**

1 December 1998

## STOCKHAUSEN and MANTRA

Our second group of lectures develop issues which we presented in our opening set. So, against that background, we've decided to focus more specifically on individual pieces. Last Friday, it was Messiaen and the 1944 piano work *Vingt Regards sur l'enfant Jesus*. *Vingt Regards* is an epic composition, lasting two and a half hours in performance; its musical language highly personal, and explained in fine detail by the composer both in the score and in the contemporaneous two volumes of *The Technique of my Music Language*.<sup>1</sup> We noted that the desire to explain the workings of one's musical language is a particular characteristic of many significant 20th century composers - Schoenberg (eg *Composition with 12 notes*<sup>2</sup>), Boulez (eg *Thoughts on music today*<sup>3</sup>), and today's featured composer Karlheinz Stockhausen.

Messiaen's *Vingt Regards* looks both forwards and backwards; some of its piano style undoubtedly has its roots in the work of earlier composers, and yet the overall impression is of a remarkably personal document. If Messiaen's musical language appears, on the surface, to be something of an unlikely hotch potch of modes, eastern rhythms, number patterns and loosely transcribed birdsong, it is the sheer driving force of the vision of the work which succeeds; the technique is at the service of this vision.

Messiaen's piano style in *Vingt Regards* did for the piano what Stravinsky's *The Rite of Spring* had done for the orchestra. It consolidated the sounds of the past, and brought many new; it was to prove at once hugely influential yet it remained highly personal. In many ways the work represents the culmination of the journey the piano had begun in the early nineteenth century. Our second and third lectures look at developments in writing for the piano which have come from composers wanting to extend the range of available timbres by using electronic means. Appropriately, given Gresham College's recent support for my colleague Joanna MacGregor's John Cage project and CD, some examples in the third lecture will be from pieces that relate directly to Cage's extraordinary reinventing of the piano as a miniature percussion orchestra in the 1940s.

Karlheinz Stockhausen studied with Messiaen at the Darmstadt Summer Schools in the early 1950s. By this stage, Messiaen was exploring further dimensions in his musical language; in his *Four Studies*, he had attempted to bring rhythm, pitch and articulation under more systematic control. In one of these studies, *Mode de Valeurs et d'Intensitiés*, he linked

---

<sup>1</sup> Messiaen, O: *The Technique of my Musical Language*, Paris, 1944

<sup>2</sup> as reprinted in Schoenberg, A: *Style and Idea*, ed Stein, L/ trans. Black, L, Faber and Faber, London 1975

<sup>3</sup> Boulez, P: *Thoughts on Music Today*, trans. Bennett RR and Bradshaw, S, Faber and Faber, 1971

three related 12 note modes with a durational sequence which increased by one unit at a time, eg:

[mode II]

ff mf mf p pp p p

1x f; 2x f; 3x f; 4x f; 5x f; 6x f; 7x f etc.

To this material he added a sequence of articulations and dynamics. The result was a music which had an almost mechanical logic, but which was quite far removed from the world of *Vingt Regards*. Messiaen's pupils, notably Stockhausen and Boulez continued to explore the possibilities of such an approach. Significantly, Boulez's first major product of this new way of writing, *Structures* (Book 1, 1952), takes as its starting point a 12 note row taken from one of Messiaen's *Four Studies*. In addition to Messiaen's example, these ideas had also been latent in the late works of Anton Webern; Webern had begun to experiment with the association of dynamics and articulation with pitch, register and duration. For a while, composers sought a new musical language in which as many as possible of the various parameters - pitch, rhythm, articulation, even register, tempo and instrumentation - could be related, ideally through a single source. This seemed a logical extension of Webern's aesthetic.

If, in the end, the results proved largely unmemorable, this had been an important journey for music to take, and Messiaen's role was significant. As we shall hear, the idea of a single, governing idea never really left Stockhausen, even if the way in which this was to be achieved needed greater flexibility than the rigidity of what became known as total serialism.

In 1968, Stockhausen completed a series of pieces which are simply texts to be used as starting points for improvisation. Public performances of 11 of the *Aus den Sieben Tagen* (*From the seven days*) in the 1969 Darmstadt Summer Schools provoked a debate about the role of the composer; in effect, these are propositions rather than compositions, and rather poetic ones at that - three of the texts require the performer to play 'a vibration in the rhythm of the Universe'. (A story goes that a young musician asked Stockhausen how he would know if he was playing a vibration in the rhythm of the Universe. 'I will tell you' was the firm reply). Another set of 17 texts for improvisation followed between 1968 - 70, *Für Kommende Zeiten* (*For times to come*), and in 1970 Stockhausen visited the World Fair EXPO 70 at Osaka, where 20 singers and instrumentalists performed

his largely improvised music for five and a half hours a day for six months in a specially constructed spherical auditorium. This experience was to mark the end of his text/improvisation period; whilst travelling, he conceived the idea of *Mantra*. He was on a car drive from Madison to Boston in September 1969:

There were four people in the car, I was sitting next to the driver, and I just let my imagination completely loose. Shortly before this, I'd travelled to Los Angeles in a plane, and the same thing happened. On the plane I made a few sketches for a piece for two pianos that had come into my mind. And now, on the way to Boston, I was humming to myself... I heard this melody - it all came very quickly together: I had the idea of one single musical figure or formula that would be expanded over a very long period of time, and by that I meant 50 or 60 minutes<sup>4</sup>.

*Mantra* was to seem a significant turn around in style, though the composer refutes this<sup>5</sup>; nevertheless, here was a work for his most conventional combination for a considerable time (two pianos) and every note written in (largely) conventional notation.

The title reveals that the Sixties fascination with orientalism had touched Stockhausen - indeed, he was a leader. His interests lay not only with the orient - his vision of the interaction of world musics on a global scale, hinted at in several works his own works of this period, may yet come to fruition in the new millennium. The sheer range of his work, from the drama of pieces like *Momente* (1961-64) to the Zen-like quality of *Stimmung* (1968) was attracting the attention of popular artists and their followers as well as the more conventional new music audience. No less luminaries of the period than Paul McCartney and John Lennon visited his concerts, and his picture features on the famous Peter Blake cover for the *Sgt. Pepper* album. I remember reading an article about him in *Melody Maker* in the late sixties, and one of the leading sources for information about the composition of *Mantra*, (which I have just quoted from) is from an interview by the American journalist Jonathan Cott who had also interviewed Stockhausen for *Rolling Stone* magazine.

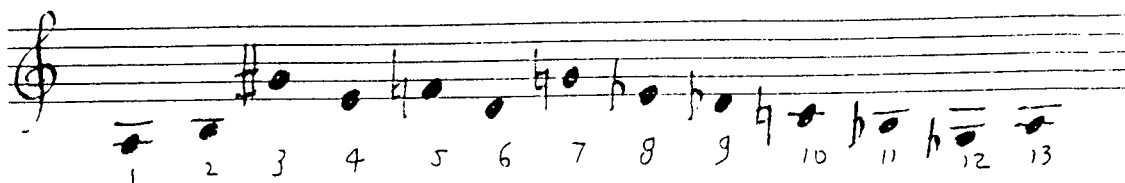
To return, then, to *Mantra*, and its instrumentation. In addition to the two pianos, each of the pianists has a set of 12 antique cymbals (the sets are not identical), and a woodblock. One of the pianists also controls either a short wave radio or a pre-recorded tape of short wave radio sound. Both also control a piece of electronic equipment, specially made for this work, at the heart of which is a ring modulator. More of this shortly.

In *Mantra*, the central formula around which the piece is based is a 13 note melody. This is the mantra of the title, and these are the 13 notes:

---

<sup>4</sup> Cott, Jonathan: Conversations with Stockhausen, Robson Books, 1974

<sup>5</sup> In an interview with the author, BBC Radio 3 *Hear and Now*, November 1996



But the composer insists that this is not a row in the sense that a serial composer would view it. From the outset it is associated with 13 different characters:

1. A4; regular repetition

2. B4; sharp off-beat accent

3. G#4; normal

4. E4; grace note upbeat around central note

5. F/D; tremolo

6. D4; note with chord in L.H.

7. G4; loud double attack

8. E4; grace note link with previous note

9. D4; staccato

10. C4; irregular repetition

11. B4; trill

12. G4; sfz attack

13. A; note acc. by arpeggio

There are thirteen sections in the work. In each one, one of the above characters is featured ahead of the others. In a minute we shall see this at work in the first section, but first let's return to the electronics. In a performance of *Mantra*, both pianos are miked up, and the feed goes both into the ring-modulator and straight into the mixing desk. This means that simultaneously we hear the live sound of the piano and whatever transformations are effected by the ring modulator. For our demonstration

today in this small hall, we're taking the microphone straight into the ring modulator - the live piano sound is already strong in here.

A ring modulator contains a sine wave generator - that is, it can make pure musical tones of its own. However, these are used in combination with the incoming sound, in this case from the piano. The ring modulator turns these two sounds into four - the incoming frequencies are added, and subtracted and combined with the original sounds. For example, if the sine wave is tuned to 220, and you play the note middle C on the piano (frequency 256) you get the frequencies of 36 (very low), 220, 256 and 476. This simple but effective piece of equipment is perhaps best known in a rather different context - as the provider of the chilling tones of the Daleks in Dr. Who.

### Demonstration of ring modulator / piano

*(The ring modulator sine wave tuned to A 220 Hz; demonstration of octave consonance when piano A sounded, and fifths heard when E played; greater dissonance as pitches move away from close relatives of A)*

So how do the two ring modulators operate in *Mantra*? Quite simply, Stockhausen uses them to provide another dimension to the harmonic structure. For each of the 13 sections of the work, the modulators are tuned to successive notes of the mantra - piano I follows the mantra in its original form, piano II in its inverted form :

The image shows handwritten musical notation for two players, Player I and Player II, over 13 sections. Player I's notation is on a grand staff (treble and bass clefs). Player II's notation is also on a grand staff. Vertical lines connect the notes of both players across the sections, indicating their relationship. The notes for Player I are: 1. A (treble), 2. A (treble), 3. A (treble), 4. A (treble), 5. A (treble), 6. A (treble), 7. A (treble), 8. A (treble), 9. A (treble), 10. A (treble), 11. A (treble), 12. A (treble), 13. A (treble). The notes for Player II are: 1. A (bass), 2. A (bass), 3. A (bass), 4. A (bass), 5. A (bass), 6. A (bass), 7. A (bass), 8. A (bass), 9. A (bass), 10. A (bass), 11. A (bass), 12. A (bass), 13. A (bass).

This means that in each section there are in effect two harmonic 'centres' around which the music revolves. For reasons that our demonstration has shown us, the ring-modulators will provide stronger consonance around the central pitch and its close relatives (third, fifth, octave) than it will with more distant pitches. One of the remarkable features of *Mantra* is the way that the electronics are built into the harmonic structure of the work, and not simply added on as an extra effect. This in itself would mark out the composition of *Mantra* as a brilliant idea, quite apart from the quality of the musical development of this idea.

Here's the opening of the *Mantra* without electronic transformation:

*(demonstration)*

And now here's that same passage with the ring-modulator turned on, and the sine generator tuned to the A, the first note of the mantra:

*(demonstration)*

We can demonstrate this more fully, and the impact of those identified characters in an individual section by listening to the first section after the initial statement of the mantra. As happens throughout the piece, the announcement of a new section is made by the crotales. In this section, both ring modulators are 'tuned' to A, and the featured characteristic is the repeating note, the first in his list:

*recording (bars 12 - 64 )*

Inevitably, time in this short lecture prevents us exploring this feature throughout the work. I'd like to turn now to humour in *Mantra*, an important aspect of its drama. Stockhausen tells us that an early idea for this commission for the Kontarsky brothers was to compose a largely visual piece, a kind of theatre for two pianos, he called it. He dropped this in favour of the work we now have, though it may be that some of the more visual elements of *Mantra* owe something to the discontinued project. To some extent there's an inherent humour in the sight of pianists struggling to match the demands of the percussion and the virtuosic pianism, snatching beaters for important strikes of woodblock and crotales, flinging them down for the next piano passage. With both pianists absorbed in the intricate details of their own contribution to the piece for much of the time, there are some amusing exchanges between them. On one occasion, this takes the form of calling across to each other in a style developed from Japanese Noh theatre. In another exchange, there's a disagreement about a top note:

recording,( p.16 - 17 of the score)

The final few minutes of the piece take us at a blistering pace through the material of the first 12 sections. This is not a literal rerun, but one based on the thirteen scales which Stockhausen developed by extending the intervals of his original thirteen note Mantra to provide further material. We're going to join this at a rather still moment just before the final onslaught:

[recording]

As was the case in our look at Messiaen, it is the strength of the piece itself, not the elaborate construction of its language which marks it out as a masterpiece. The 70 minutes of *Mantra* contain music of great beauty, fiery virtuosity, humour, pathos and energy. In our first Gresham lecture, we considered why, after over 20 years of IRCAM in Paris, with its massive funding, there are few (if any) musical masterpieces to have emerged, we noted that *Mantra*, the product of a pre-digital age, still remains one of the strongest candidates for electro-acoustic composition of the century. In his 1976 book on Stockhausen, Robin Maconie begins his chapter on the piece with the words 'Mantra is a masterpiece'. I cannot disagree.

© Professor Stephen Pratt



# *GRESHAM COLLEGE*

## **Policy & Objectives**

An independently funded educational institution, Gresham College exists

- to continue the free public lectures which have been given for 400 years, and to reinterpret the 'new learning' of Sir Thomas Gresham's day in contemporary terms;
- to engage in study, teaching and research, particularly in those disciplines represented by the Gresham Professors;
- to foster academic consideration of contemporary problems;
- to challenge those who live or work in the City of London to engage in intellectual debate on those subjects in which the City has a proper concern; and to provide a window on the City for learned societies, both national and international.

Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH  
Tel: 0171 831 0575 Fax: 0171 831 5208  
e-mail: [enquiries@gresham.ac.uk](mailto:enquiries@gresham.ac.uk)