

## Montage technique in Edgard Varèse's *Déserts*<sup>1</sup>

This paper aims to show how carefully Varèse embedded the electronic interpolations in the score of *Déserts*. It demonstrates how Varèse created coherence, not only in the instrumental score but also between the instrumental score and the electronic interpolations. To this end he used reference tones and connecting percussion phrases, and a compositional technique called montage. Examination of the original manuscript shows that this montage technique enabled Varèse to write the score in an arbitrary chronological order.

### Introduction

Although the interest in Varèse's music has increased rapidly over the past few years, only few analyses of his complete composition *Déserts* have been published to date. Because Varèse allowed conductors to perform his work without the tape interpolations – thus giving rise to the assumption that the tapes are of secondary importance – investigators have focussed on the instrumental score.

The interesting question of how Varèse managed to make one composition out of two autonomous works of art has remained unanswered so far. This article intends to show how carefully Varèse embedded the electronic interpolations in the score. It will demonstrate how Varèse not only created coherence in the two *Déserts* by using reference tones and connecting percussion phrases, but also by means of a specific compositional technique, which I will call montage.

The term 'montage', does not intend to refer to the simple sticking together of two pieces of paper or tape, but to the unification of two musical entities that were independent and complete before they were brought together. With the montage either the two entities were changed, or a new connecting entity was introduced, to make a seamless joint. In this respect, montage must be distinguished from collage.

In my view Varèse composed independent musical phrases, which he next assembled by using another (percussion) phrase, or by starting a new phrase within the previous one. With the same montage technique Varèse integrated the electronic interpolations into the instrumental score. Until the moment, in 1994, when I was able to study the original manuscript, my ideas on Varèse's montage technique had only been backed up by his wife Louise and his pupil Chou Wen-chung, who had seen fragments of the piece hanging on a long line in front of his desk: 'Varèse had fragments, of the piece he was working on, on a long line, on the wall in front of his desk, that he called his "laundry line". These fragments were glued together; by sticking new parts on top of the old ones, sometimes complete constructions were made.'<sup>2</sup>

Appendix A presents a list of paper brands and pieces that were glued into the score. The use of different paper brands and pencils as well as the clues given by the stamps on

1 This paper was read at the Fourth European Music Analysis Conference, Rotterdam, October 22, 1999. I wish to thank the late Chris Walraven for his help, and the Netherlands Organization for Scientific Research for the travelling grant. I am grateful to Sjef Schoorl for editing my English translation.

2 Chou Wen-chung in Sherman Van Solkema (ed.), *The new worlds of Edgard Varèse: A symposium*, New York 1979 (I.S.A.M. Monographs 11), p. 88.

the envelopes used by Varèse can tell us something about the history of the making of *Déserts*. However, even more important for the understanding of the montage technique are the passages where Varèse visibly changed the score.

### Parts pasted into the score

Varèse worked on *Déserts* during a period of at least four years. According to Chou Wen-chung, Varèse already started working on *Déserts* in the summer of 1950, when he came to Darmstadt: 'The basic concept of the piece was already completed. I was involved at that time copying from the sketches, and so on, so I was aware of this plan. He was at that moment just beginning to get equipment.'<sup>3</sup> Varèse not only changed his original score during those years, he went on making changes in the notes during the rehearsals and after the première on 2 December 1954.<sup>4</sup> He literally glued pieces of paper into the score, or notated fragments of the composition in the margin. The fact that he hardly ever changed the numbering of the measures, suggests that he did not add measure numbers prior to finishing the score.

The most striking example of a musical phrase that was pasted to the score, is without doubt the phrase mm. 41-45 (mm. 40 and 46 are connecting measures), that was written on an old program of the Greater New York Chorus (Example 1).<sup>5</sup> Probably this belonged to a concert given in 1946.<sup>6</sup> In many respects these measures contain the germ of the complete composition, using symmetry of intervals, counterpoint, individual dynamics and reference tones. Therefore, it can be assumed that these measures were the first of *Déserts* Varèse composed.

Mm. 41-45 are one of the most beautiful examples of a closed phrase, a musical phrase with a clear beginning and end. Around the fifth  $e^{1-bb^1}$ , a symmetrical sound mass is built up in such a way that an almost perfect mirror canon is created (Example 2).<sup>7</sup> In addition to the beginning and end of this canon, the following aspects add to the closed character of the phrase: differing tempo and pulse during the phrase, individual dynamics for all instruments involved, the start of a solo horn melody in m. 45 and, most important of all, the use of all twelve pitch classes.

Although Varèse always would claim he disliked systems for composition, he benefitted from the twelve-tone technique. Preferably, he would not repeat a pitch class before all twelve pitch classes have been used. So, when several pitch classes are used for one soundmass, the first notes after this are the missing pitches. For instance, in m. 117 (Example 3) the missing pitch class  $Bb$  is one of the first notes of the following horn solo.

3 Ibidem, p. 78.

4 The score used by conductor Hermann Scherchen for the première of *Déserts* can be seen in Berlin, Akademie der Künste, Scherchen Archiv, p. 1348. The score was published by Colombo (now Colfranc), New York 1959.

5 A copy of the original handwriting of these few measures can be found in *Perspectives of New Music* 4/2 (1966), between pages 26 and 27.

6 Fernand Ouellette (transl. by Derek Coltman), *Edgard Varese*, New York-London 1973, p. 163.

7 Larry Stempel, 'Varese's "Awkwardness" and the Symmetry in the Frame of the Twelve Tones: An Analytical Approach', in: *Musical Quarterly* 65 (1979), pp. 148-166, p. 156; Jürg Stenzl, 'Varèsiana', in: *Hamburger Jahrbuch für Musikwissenschaft* 4 (1980), pp. 145-162, p. 160. The canon would have been strict if the third trumpet's  $e^1$  had been played after the  $bb^1$  of the second trumpet.

A page of a musical score for 'Déserts', measures 41 to 46. The score is for a full orchestra and piano. The instruments listed on the left are Piccolo (Picc.), Flute (Fl.), Clarinet (Cl.), Bass Clarinet (Bb Cl.), Bassoon (Bsn.), Horns (Horn), Trumpets (Tpt.), Trombones (Tbn.), Tuba (Tuba), and Piano (P). The tempo is marked as  $\text{♩} = 108$ . The score includes various dynamics such as *pp*, *f*, and *mf*, and articulation marks like accents and slurs. There are also performance instructions like 'Open', 'Tuba', and '1. Sord.', '2. Sord.', '3. Sord.'. The piano part is at the bottom of the score.

Example 1

*Déserts*, mm. 41-46 (published score, pp. 8-9).

A short musical notation snippet showing a melodic line in the treble clef and a bass line in the bass clef. The treble clef line starts with a half note G4, followed by a quarter note F#4, a quarter note E4, and a half note D4. The bass line starts with a half note G3, followed by a quarter note F#3, a quarter note E3, and a half note D3. The notation is in a key with one sharp (F#) and one flat (Bb).

Example 2

*Déserts*, Mirror symmetry in mm. 41-46.

A musical notation snippet for measures 117-117. The notation is for Flute and Clarinet (Fl., Cl.), Trumpets (Tpts.), Trombones (Tbns.), Tuba (Tuba), and Timpani (Timp.). The notation shows a complex rhythmic pattern with various note values and rests. The key signature has one sharp (F#) and one flat (Bb).

Example 3

*Déserts*, mm. 115-117 (published score, p. 29).

This is also the introduction of the new reference tone (see below). Jürg Stenzl's hypothesis that Varèse composed this phrase as an homage to Webern, who died 15 September 1945, seems more likely, now that we know that these 'twelve tone' measures were notated on a program note of 1946.<sup>8</sup>

### Reference tones

As we have seen, the phrase mm. 41-45 is perfectly symmetrical around the interval axis  $e\flat^1$ - $b\flat^1$ . It is as if the first forty measures of *Déserts* are leading centripetally to this interval: the sounds of the two distinct groups of high and low wind instruments are linked together into one soundmass.

Varèse himself pointed out that in his works certain tones might function as tonics:<sup>9</sup>

'My language is naturally atonal, although certain themes, certain notes repeated, in the manner of tonics, constitute axes around which the soundmasses seem to conglomerate. In this way the development grows little by little by the repetition of certain elements which always present themselves under different aspects, and interest continues by the opposition of the planes and the movement of the perspectives. If the themes reappear, they always occupy a distinct function in a new medium (the volumes).'<sup>10</sup>

After m. 45 the instruments appear to be in search of a new reference tone. It is the horn in m. 101, which causes a new separation between high and low instruments, with the help of reference tone  $e\flat^1$ . When in m. 110 the piccolo plays the highest note  $b\flat^4$  and in m. 117 the lowest note appears to be an  $E\flat_1$ , we may conclude that there is a connection between the narrow central interval  $e\flat$ - $b\flat$  in mm. 44-45 and the widest possible version of the same interval in mm. 110 and 117. M. 117, which again is symmetrically built around the interval  $f$ - $f\sharp^1$ , is the pivot to a new reference tone,  $B\flat$ . The various reference tones of *Déserts* can be seen in the scheme of Figure 1. The striking fifth relations turn this scheme into a harmonic one with the  $E\flat$  as tonic.

Reference tone	$E\flat$	$B\flat$	$C\sharp$	$G\sharp$	$B\flat$	$E\flat$
Measure	41	118	155	178	288	313

Figure 1

Scheme of reference tones.

Chou Wen-chung copied Varèse's handwriting very carefully. I have noticed only one mistake, which, although it had been corrected by Varèse himself, was taken over in the published score: in m. 199 of the published score, the second horn part is notated in a bass clef, which must be a treble clef, so that the horn plays the reference tone  $E\flat$ . This reference tone not only determines the beginning and the end of the score, it also plays an important role in the tape. Both the flute tone at the beginning of the first interpolation and the central tone of the soundmass at the end of the third interpolation are  $E\flat$ . In this way Varèse not only created coherence within the score but also between the score and the tape.

<sup>8</sup> Jürg Stenzl, 'Varèsiana', in: *Hamburger Jahrbuch für Musikwissenschaft* 4 (1980), p. 162.

<sup>9</sup> From now on I will call these tones reference tones.

<sup>10</sup> Translation quoted from David R. Bloch, *The music of Edgard Varèse*, Ph.D. Dissertation, Spokane: University of Washington, 1973, p. 260.

## Percussion

Another, more clearly discernible coherence shows up in the percussion parts, which are the real glue of *Déserts*. In the manuscript the percussion parts were often written down separately, sometimes even in the margin, with pencil instead of ink. Chou Wen-chung confirmed that Varèse mostly composed the percussion parts separately, and added them to the other parts later on.<sup>11</sup> Sometimes the percussion part seems to be used as a connecting phrase in order to smooth out the splice between two closed phrases. This is the case, for instance, at the point where the second interpolation intervenes, in m. 224 (Example 4). The striking triplet figure of the timpani in mm. 216 and 217 is repeated in m. 225. In fact, the percussion phrase mm. 216-225 just goes on, temporarily delayed by the interpolation. Around the second interpolation I could not find any sign of change comparable to Varèse's visible struggle to make the first and the third interpolations fit into the score.

### Example 4

*Déserts*, mm. 216-225, Percussion (published score, pp. 58-59).

11 Conversations with Professor Chou Wen-chung in 1994, March 16, 22 and 29.



## Incorporating interpolations

Around the incorporation of the first and the third interpolations in mm. 82-83 and 263-264, Varèse added measures by sticking pieces of paper on to the manuscript. Although the tapes were not completed before 1954 in the studios of the Club d'Essai in Paris, whereas Varèse finished working on the instrumental score two years before,<sup>12</sup> he had a preconceived plan for combining the instrumental score and the electronic parts: 'After planning the work as a whole, I wrote the instrumental score, always keeping in mind its relation to the organized sound sequences on tape to be interpolated at three different points in the score.'<sup>13</sup>

The first interpolation fits seamlessly to m. 82, where the trumpet plays a memorable melody. Mm. 82-84 were notated on the back of an envelope postmarked 6 October 1950, which was glued to the manuscript afterwards. Adding the third interpolation, Varèse even had to change the measure numbers. Did he adjust the instrumental score to the tape? Since this is a very good example of the montage technique, let us have a closer look into the matter, on the basis of the diagram of measures 228-274 in the manuscript; see Figure 2. Varèse used one sheet and half a sheet of paper pasted together:

228-237	241-246	247-263 /interpolation
238-240	270-274	264-269

aglued

Figure 2

Diagram of measures 228-274.

Mm. 247-263 and mm. 264-269 as well as 270-274 are closed phrases, mm. 247-263 being integrated in the previous phrase where the horn already starts with the F#. Because the tape had to fit in between two phrases that had been notated on a separate piece of paper, I assume that both phrases were composed especially to ease the incorporation of the electronic interpolation. The changes of the measure numbers (264-269 first were 257-261, and 261 was divided into 268 and 269) and the pasting of the separate parts for tuba, trombone and piano in mm. 247-263 show how Varèse struggled to find a smooth connection of instruments and tape. Or maybe he tried to find the best preparation for the climax in m. 270.

### Climax

Measure 270 is the climax of the instrumental score (Example 5): *fff*, all instruments taking part in a soundmass using, for the first and only time in *Déserts*, all twelve pitch classes at the same time. In this respect a comparison between the published score and the manuscript reveals a striking detail: in the manuscript three soundmasses have all twelve pitch classes: mm. 270, 276 and 294 (Examples 5 and 6); in the final version, Varèse weakened the others in order to emphasize the climax in m. 270.

12 Fernand Ouellette, *Edgard Varèse*, New York-London 1973, p. 175.

13 Henry Cowell, 'Current Chronicle', in: *The Musical Quarterly* 41 (1955), pp. 370-373 (here pp. 371-372).

The image displays a musical score for the piece 'Déserts', measure 270. The score is arranged in a standard orchestral format with the following parts from top to bottom: Piccolo (Picc.), Flute (Fl.), E♭ Clarinet (E♭ cl.), Bass Clarinet (B♭ cl.), Horns (Hns.), Trumpets (Tpts.), Trombones (Tbns.), and Piano (Pl.). The score includes various musical notations such as dynamics (ff, p, p sub.), articulation (accents), and phrasing (slurs). A reduction of the woodwind and piano parts is shown to the right of the main score, with the label 'Red.' above it. The reduction shows a simplified version of the woodwind and piano parts, focusing on the essential melodic and harmonic lines.

*Example 5*

*Déserts*, m. 270, score and reduction.

For the same reason Varèse could have decided to limit the presence of the organ to the third interpolation: 'It will be noticed that the shorter the section, the higher the intensity, the music rising to a climax in the third interpolation and fourth instrumental section, finally fading out in a long pianissimo.'<sup>14</sup>

14 *Ibidem*, pp. 371-372.

### Example 6

Soundmasses in mm. 276 and 294 in manuscript and published score.

In the manuscript Varèse made a reservation for an organ part in 165 measures (mm. 1-117 and 275-323),<sup>15</sup> and in the first version of the tape (from 1954, the final version was made in 1962) he used organ sounds in all three interpolations. In the beginning of *Déserts* the organ part was notated only in part; it turns out to be mostly a doubling of the piano part. Concerning register indications like 'anches', 'mixture' and 'gambe' (measures 36 and 49), Varèse must have had in mind the sound of the French romantic organ, which he remembered from his lessons with Charles Marie Widor at the Conservatoire of Paris. This would also clarify why he gave the original organ part to low brass instruments.

If we make a distinction between the measures with and without a reservation for an organ part, the result is a division into three parts, which coincides with the changes of paper brands (see Appendix A). The fact that the organ part does not occur in mm. 118-274 suggests that these measures were written later. That mm. 1-117 were written first can be derived from the slight discolouring of the papers where they had been clipped to the laundry line.

In summary, we have seen that Varèse added pieces of paper and percussion parts later on. He integrated electronic interpolations after the score was finished. Moreover, he probably wrote the middle section of the score after he had written the first and last sections. We may conclude that the montage technique enabled Varèse to write the score in an arbitrary chronological order.

## Conclusion

Varèse composed independent musical phrases, which he, sometimes literally, glued together afterwards. He did not just put the phrases together, but he used a montage technique, changing the original phrases or adding a new phrase to create a seamless joint, especially around the integration of the first and third tape interpolations. Other compositional means to create coherence both within the score and between the score and the electronic interpolations are the use of reference tones and connecting percussion phrases. Examination of the original manuscript lends support to the conclusion that the score was written in an arbitrary chronological order.

<sup>15</sup> Although we can draw no conclusions from the fact that Varèse changed paper brands, it is remarkable that the two moments in *Déserts* with a strong cadence effect, where all instruments stop *fff* at the same moment, coincide with the changes of paper brands: mm. 117-118 and mm. 274-275 (taking 271-274 as the continuation of the percussion phrase that started in mm. 264).



## Appendix A.

### List of paper brands and pieces that were pasted into the score

Professor Chou Wen-chung gave me the opportunity to study the manuscript of *Déserts* from March 16 until 31, 1994. Besides, he showed me a percussion score, which Varèse most likely wrote for the interpolations, and several copies of the printer's proof that had been corrected by Varèse. One of these proofs was used by Hermann Scherchen for the première on 2 December 1954. The manuscript was in a respectable condition: only one page with mm. 105-117 was missing. Varèse notated his score with black ink and pencil, using a red or a blue pencil for changes. He not only used several paper brands, but also old envelopes and concert programs. This corresponds with the assertion of Louise Varèse: 'Varèse always preferred making things to buying things readymade. For his work paper he used to open up the envelopes that came in his mail and paste them on pieces of yellow copy paper, brown wrapping paper, anything at hand, making long strips, often two or three feet, on which he would draw his staves and write down his musical ideas, often with colored inks.'<sup>16</sup>

Paper I: 1595 Broadway S 187.

Measures 1-118, 105-117 missing.

Each page is divided into two sections: (a) and (b).

NB: a part for the organ has been notated; it mostly doubles the piano part.

1(a)	1-25	
2(a)	26-31	
2(b)	32-39	
2(c)	40-46.	Glued to 2(b), at the back: measures 43b-46 and printed 'Greater New York Chorus. Edgard Varèse, director'
3(a)	47-52	
3(b)	53-59	
4(a)	60-66	
4(b)	67-76	Measures 75-76 glued to this part on a transparent paper, the parts for organ and gong glued to 75-76 on a different piece of paper.
4(c)	77-81, 82-84	Glued to this part, written on an envelope with the address of Varèse, postmark: oct-6'50
5(a)	85-89	
5(b)	90-94	
6(a)	94-99	
6(b)	100-104	

<sup>16</sup> L. Alcopley, 'Edgard Varèse on music and art. A conversation between Varèse and Alcopley', in: *Leonardo* 1 (1968), pp. 187-195, p. 192, footnote.

Paper II: Passantino Brands, Symphony Space 18 x 18.

Measures 118-215.

Two pages are joined together; each page is divided into two sections; the pages are not numbered.

No organ part.

118-121/122-126, connected with 127-130/131-133

134-137/138-141, connected with 142-145/146-149

150-154/155-157, connected with 158-160/161-164

Measure 164 is glued to this page on a separate piece of paper:

166-169/170-174, connected with 175-186/187-193

194-197/198-200 Paper size: 18 x 8

201-203/204-207, connected with 208-211/212-215

Paper III: Carl Fischer Monarck Brand, 7-16 lines.

Measures: 216-227.

No organ part.

216-222

223-227

Measure 226 was added later, considering the different handwriting and the use of another (blackish) pencil. Besides, this measure is notated at the bottom of the page, below the percussion parts. Various erasures.

Paper II (see above).

Measures 228-274.

No organ part.

228-237/238-240, connected with 241-246/270-274

Measures 247-263/264-269 were glued to this page, whereas the parts of the Tuba, Trombone and Piano of measures 257-263 were glued to it separately. The original rests during half of measure 258 were crossed out.

Measures 264-269 used to be 257-261; these numbers were crossed out and 261 was divided into 268 and 269.

Paper IV: G. Schirmer Imperial Brand No. 19-20 staves, 13 3/8 x 10 3/4 inches.

Measures 275-323

Two pages are linked together; each page is divided in two sections; the pages are not numbered.

The organ part had been planned, but the staves are empty.

275-279/280-286

Measure 280 glued to 279.

Measures 287-290 glued in between 283 and 284 on a separate page, which is empty on one side with the exception of the remark 'organ'.

From measure 288 on all measures were given a higher number.

291-295/296-300, connected with 301-310/311-323

Measures 301-303 were notated under measures 304-310 and with an arrow directed to the upper part of the page.