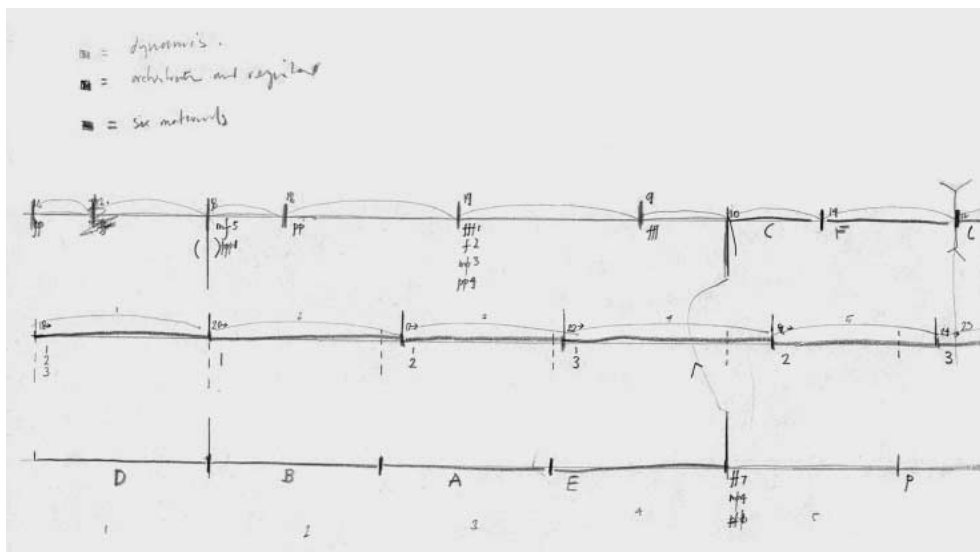


“From the Mechanical to the Magical” Birtwistle’s Pre-Compositional Plan for *Carmen Arcadiae Mechanicae Perpetuum*

by David Beard

In 1983, Harrison Birtwistle spoke to Michael Hall of his interest in the working methods of Paul Klee, as revealed in Klee’s *Notebooks*. Birtwistle was impressed by the relationship between the sketch and the finished painting, which the editor had placed side by side, and he referred to this as a transformation “from the mechanical to the magical.”¹ In the light of his remark, this article will consider some of the sketches for *Carmen Arcadiae Mechanicae Perpetuum*, composed in 1977–78.² No discussion of these sketches exists, which is surprising as *Carmen* has attracted much analytical attention.³

As well as charting the beginnings of new tendencies in Birtwistle’s stylistic development, *Carmen* reworks and refines earlier interests, most obviously Stravinskian block form. Birtwistle had first explored this technique



Example 1: Harrison Birtwistle, *Carmen Arcadiae Mechanicae Perpetuum* (1977–78), plan of composition, p. [1] (Harrison Birtwistle Collection).

in *Verses for Ensembles* (1969). Like *Verses*, *Carmen* is highly sectional, juxtaposing blocks of varied material interrupted by sustained tones. *Verses* had been completed at Princeton University, where Birtwistle studied with the music theorist Edward T. Cone. The score for *Verses* closely resembles the layering graphs that Cone had developed for analyzing Stravinsky's *Symphonies of Wind Instruments*.⁴ This idea of layering was formative in shaping Birtwistle's approach to the composition of *Carmen*.

The Harrison Birtwistle Collection in Basel contains two folders of sketches and early drafts for *Carmen*.⁵ Of particular interest is a pre-compositional plan for the entire piece, the only complete plan for any work by Birtwistle in the collection. Written across five and a half A4-size sheets, which were originally taped together, the plan maps out a series of events which exceeds the length of the actual piece by at least half as much again. In the manner of a child's colouring scheme by number, Birtwistle began by following his plan to the letter. However, later in the piece, particularly in the second half, he applied more intuitive decisions, retaining the events but altering their order.

Birtwistle's programme note to *Carmen* states that:

It consists of six mechanisms, which are juxtaposed many times without any form of transition. The dynamics of the piece have a time-scale independent of that of the mechanisms, creating an independent dynamic life of their own. This process is also applied to the registers of the piece.⁶

Analysts who have worked on *Carmen* all agree on the existence of six textural ideas. These are characterized by varied repetition of short cells, which may be rhythmic, textural/rhythmic, or based on pitch contour. Analysts seem altogether less certain, however, of the existence or importance of different schemes for determining dynamics and register.

Example 1 shows the first page of the plan Birtwistle drew up for *Carmen*. At the top is a color-coded key which lists three variables: dynamics in green, orchestration and register in blue, and "six materials" (later referred to in his programme note as mechanisms) in red. Beneath this, three horizontal lines have been drawn. These are divided into sections according to different sets of criteria, but all reflect a basic durational block of eighteen units.⁷ The lowest line consists entirely of blocks of eighteen, thereby setting up a durational ostinato. Birtwistle distributed his three variables across all three lines. For example, he used the lower line for the first four mechanisms (marked D, B, A, and E) before moving up onto the top line, where the durational lengths are more irregular. At this moment, the dynamics scheme moves down from the top to the bottom line, whilst the scheme for orchestration and register continues along the central line, which is mostly characterized by long durations.

What is uniquely interesting about the sketches is that they reveal a number scheme was used to determine the order of the "six materials" as

	A	B	C	D	E	F
1	3	2	5	1	4	6
2	6	3	1	5	4	2
3	4	3	6	1	2	5
4	4	1	6	2	3	5
5	4	6	3	1	5	2

Figure 1

	1	2	3	4	5
In the plan:	DBAECF	CFBEDA	DEBAFC	BDEAFC	DFCAEB
		A E	ED CEA		
			A		
			F		
In the score:				EFBD [not used]	

Figure 2

D	B	A	E	C	F	C	F	B	A	D	E
18	18	18	18	10	14	12	18	18	18	9	9
36		36		36			36		36		
F	D	B	C	E	A	[E	F	B	D]	(The score ends here but the plan continues)	
18	28	12	30	17.5	34	17.5	25	11.5	62.5		

Figure 3

they appear in the plan. On page 9 of the A4-size folder, the six ideas are listed in letter form, beneath which there are five different numerical orderings, each crossed off in red crayon (see *Figure 1*). This sketch is significant because it is the earliest indication of Birtwistle using number rotations to order events at the highest possible level. However, *Figure 2* illustrates that this was not left unchanged (subsequent alterations are shown in bold). These corrections suggest that the ordering of the mechanisms in the middle and at the end of the piece mattered greatly, and that Birtwistle arrived at his conception of the work's shape only after following his plan literally for the first nine mechanisms.

A number of points remain unclear. One is how much of an idea Birtwistle actually had of the nature of his "materials" at the time that he drew up the plan. Although they are labelled differently, no early sketches of these ideas exist. Another question relates to the decisions over when to move the various elements (the color-coded items) from one line to an-

other. *Figure 3* suggests that Birtwistle may have exercised choice in this matter. This reveals that the sequence of durations for the mechanisms forms a clear bipartite structure, with regular lengths in the first half and irregular ones in the second.

What about the other two schemes? The registral scheme contains three divisions: high, middle and low, represented by numbers 1, 2, and 3 (see the central line in *Example 1*). These positions are rotated at random, and consequently their rate of change differs from that of the mechanisms. Similarly, the dynamics are arranged from one, to collections of two, three, and four different types, which are then rotated at random, and the lower-level application of these dynamics (i.e. within sections) is determined by number.

How important are these processes to our aural and aesthetic appreciation of the work? Answering this question is complicated by the fact that Birtwistle made further alterations even after those documented in the sketches. For example, in the score, mechanisms D and B are both repeated, but A and E are not. These changes over-write the series of regular, eighteen unit durations originally planned for the first four mechanisms. However, within the mechanisms, Birtwistle remains largely faithful to the registral, instrumental and dynamic shifts dictated by the plan, and this further challenges the integrity and identity of his textural ideas.

It seems vitally important to our conception of Birtwistle's way of working to be able to see the extent to which random operations have generated his material, not least in order to perceive the process of transformation that Klee's working methods had inspired in him. However, these facts raise further questions. What considerations motivated his alterations to the plan? Do the mechanisms develop organically (the term Cone uses is "interlock")? Most tantalizing of all, however, is the fact that although a considerable amount of decision-making has been delegated to numbers and random schemes, this coincides with a period when Birtwistle's own confidence as a composer was growing, and his works were gaining public attention and appreciation as highly distinctive and personalized works of art.⁸

¹ Michael Hall, *Harrison Birtwistle*, London: Robson Books 1984, pp. 95–96.

² Birtwistle described *Carmen* as "by way of a homage to Paul Klee," commenting that its title was one Klee could have invented; cited in Michael Hall, *Harrison Birtwistle* (see note 1), p. 177.

³ The analyses that have been considered during the preparation of this article are: Jonathan Cross, *The Stravinsky Legacy*, Cambridge: Cambridge University Press 1998, pp. 71–78; Alison Deadman, "Mechanical Arcady: The Development of an Aesthetic in Birtwistle's Orchestral Works Written for the London Sinfonietta Between 1977 and 1984," M.Phil Leeds University 1990, chapter four, pp. 56–80; and Brian Robison, "Towards a Methodology for Analysing *Carmen Arcadiae Mechanicae Perpetuum*," PhD dissertation, Cornell University 1999.

⁴ Cone's tables were first presented in the article "Stravinsky: The Progress of a Method," *Perspectives of New Music* 1, No. 1 (1962), pp. 18–26, which was later reprinted in *Perspectives on Schoenberg and Stravinsky*, ed. by Benjamin Boretz and Edward T. Cone, Princeton: Princeton University Press 1968, pp. 155–64.

⁵ One folder contains forty-eight sides of A2-size sheets, each with sixteen staves, and an additional three title pages. The other folder contains thirty-two sides of approximately A4-size sheets. When referring to the location of specific sheets I shall use the abbreviation "folder size: page number" (e.g. A2: 19). The A4 sides do not contain staves but are plain white sheets.

⁶ Cited in Michael Hall, *Harrison Birtwistle* (see note 1), p. 177.

⁷ One unit in the plan is equivalent to a duration of one quarter note in the score. Sketch page A4: 21 contains the workings for these durations.

⁸ For a more detailed consideration of the sketches for *Carmen*, see my D.Phil thesis, "An Analysis and Sketch Study of the Early Instrumental Music of Sir Harrison Birtwistle," University of Oxford 2000.