

## Introduction

Morton Feldman's graphs merit attention because they altered the course of Western classical music, as John Cage observed in the epigraph to this volume. Early examples quickly gained notoriety in new music circles in the United States, becoming some of the very first musical works presented in a strikingly new notation to receive public attention. Moreover, they greatly affected Cage's own music, initially inspiring his recourse to chance operations and graph paper and subsequently encouraging his own experiments with indeterminacy and new notations. It is also likely that they affected the music of Earle Brown, who had already used similar ideas as tools in the compositional process without allowing them to take centre stage.<sup>1</sup> Cage and Brown would go on to become leading proponents of graphic notations and indeterminacy, the use of which would flourish in the United States and Europe in the late 1950s and throughout the 1960s.

There are other reasons for interest in these works within the narrower field of Feldman studies. In terms of sheer numbers, they represent approximately one-quarter of Feldman's published output from the 1950s and 1960s and one-eighth of his entire catalogue, meaning that an understanding of his music as a whole is impossible without recourse to them. Additionally, his tendency to switch between graph notation and other formats in the 1950s and 1960s is a singular aspect of his approach that invites scrutiny, as is the fact that the grids that underpin the presentation of his graphs eventually surfaced in modified form in his non-graph works.

Despite their historical pedigree, Feldman's graphs have been performed only infrequently and relatively few recordings have been issued.<sup>2</sup> First commercial releases of three, including *In Search of an Orchestration* (1967), which Feldman regarded as the culmination of this subset of his music, appeared as recently as 2005, and in four cases, there remains only one extant recording at this time.<sup>3</sup> Given that the graphs allow a

<sup>1</sup> According to Cage, Feldman's graph music 'opened the doors for both me, and for Christian Wolff, and later for Earle Brown' ('An interview with John Cage', by Anthony Brown, *Asterisk: A Journal of New Music*, vol. 1, no. 1 (December 1974), 29).

<sup>2</sup> *The King of Denmark* (1964) is an exception. For a discography, see [www.cnvill.net/mfhome.htm](http://www.cnvill.net/mfhome.htm).

<sup>3</sup> *Morton Feldman: Composing by Numbers – The Graphic Scores 1950–67*, Mode Records, mode 146, which was released in 2005, included the first recording of *Intersection 1* (1951) and the only

greater degree of legitimate variation between performances than more traditional works of Western classical music, the dearth of material to compare is disappointing.

A possible reason for the infrequency of performances is that these are relatively short works for instrumental combinations that are sometimes unusual, which may make them difficult to programme, unlike Feldman's late, long works, many of which can stand alone. Although there are five graphs for solo instruments, which should be easier to package in a concert setting, three of these are imposing works for virtuoso performers. In addition, Feldman's graphs occupy an awkward middle ground in the music of the second half of the twentieth century. On the one hand, being indeterminate, they require greater input from performers than more conventionally notated pieces, and this may lessen their appeal in some quarters. On the other hand, they are not nearly as permissive as many of the indeterminate works they helped inspire, and this may lessen their appeal to those attracted to indeterminacy. Feldman's own writings also reveal a more restrictive conception of how these works should be played than is evident from the scores, and these additional layers of control may have alienated otherwise-sympathetic performers.

To date, the graphs have generated surprisingly little musicological commentary. Even though Feldman composed his last graph almost fifty years ago, this monograph is the first comprehensive overview of the series and many individual graphs are discussed in detail for the first time in its pages. There can be no doubt that his use of indeterminate pitches and distaste for compositional systems are significant barriers to conventional methods of musical analysis. Additionally, some commentators may believe that Feldman regarded the graph series as a failed experiment and that this is the reason why he turned away from graph music in the late 1960s, but if so, they are mistaken. Others may take the view that Feldman's graphs are like the pieces with fixed pitches and indeterminate durations that dominated his output in the 1960s in being tangential to the overall thrust of his music, viewed in its entirety, and can therefore be safely ignored. True, it is difficult to see them as precursors of his long, late works, but this is a legitimate reason for ignoring them only if the long, late works represent the only truly significant music he composed. This monograph aims not only to fill the gap in the literature, but also to encourage a positive reappraisal of this currently under-appreciated series.

issued recordings of *Marginal Intersection* (1951) and *In Search of an Orchestration*. The only issued recordings of *Ixion* (1958) for chamber ensemble and *Atlantis* (1959) were released in 1997 (*Music for Merce*, BMG Music, 09026-68751-2) and 2000 (*Atlantis*, Hat Hut Records, hat [now]ART 116), respectively.

## Scope

Feldman's use of the term 'graphs' in connection with these works reflects the fact that he composed them on printed graph paper.<sup>4</sup> It also reflects his mode of presentation, which is more graph-like than conventional staff notation,<sup>5</sup> with time notated proportionately along the horizontal axis in a manner comparable with the proportional specification of a variable on the abscissa of a line or scatter graph.<sup>6</sup> Feldman was not the first composer to use graphs, graph paper or proportional notation. For example, Joseph Schillinger taught a method of composing that utilised all three in the 1930s and early 1940s, but only as tools in the process of composing fully conventionally notated works; contrast Feldman's graphs, which were the finished products of his creative efforts and meant for use in performance.

It is more than the paper and treatment of time that connects Feldman's graphs with one another, making it natural to view them as a cohesive series, even though they were composed over a lengthy period between 1950 and 1967. To begin with, they are his most arresting scores, a consequence of their being presented in an original, and particularly distinctive, notation. Details vary, but all feature symbols set within a given or implicit grid of squares inherited from his graph paper. Another shared characteristic is that they are all indeterminate, in that they do not specify some musical parameters as precisely as fully conventionally notated works.<sup>7</sup> That said, they were not the first indeterminate works composed in the modern era, as has sometimes been claimed.<sup>8</sup> Precursors include *The Unanswered Question* (1908) of Charles Ives,

<sup>4</sup> Feldman highlighted his use of graph paper on several occasions. For a representative example, see 'Crippled symmetry' [1981], in B. H. Friedman (ed.), *Give My Regards to Eighth Street: Collected Writings of Morton Feldman* (Cambridge, MA: Exact Change, 2000), 147.

<sup>5</sup> Feldman alluded to the graph-like character of his presentation in Morton Feldman *et al.*, '4 musicians at work', *transformation*, vol. 1, no. 3 (1952), 168.

<sup>6</sup> Conventional notation is graph-like in its representation of pitch, but not in its treatment of time. Richard Rastall has claimed that it represents time 'graphically' because time is presented as 'moving from left to right horizontally' (*The Notation of Western Music: An Introduction* (London: Dent, 1983), 1). The weakness of this position is evident from the fact that the same could be said of written English.

<sup>7</sup> This monograph uses the term 'indeterminate' and its cognates only in this way unless otherwise indicated. It is true that the term 'indeterminacy' was not part of the vocabulary of classical music at the time that Feldman began composing graph music; its use was not established until Cage gave an influential course of lectures that highlighted the term at the Darmstadt International Summer Course for New Music in 1958. Nevertheless, as Cage was quick to point out ('Composition as process: II. Indeterminacy' [1961], in *Silence: Lectures and Writings*, 5th edn (London: Marion Boyars, 1999), 36), the concept of indeterminacy that he outlined is applicable to Feldman's graphs.

<sup>8</sup> Calvin Tomkins, *The Bride and the Bachelors: The Heretical Courtship in Modern Art* (New York: Viking Press, 1965), 108. On one occasion, Feldman went almost as far ('The avant-garde: progress or stalemate?', *New York Times*, 5 March 1967, D27). Philip Thomas made a closely related error in

which requires only a loose coordination between sections of the orchestra, *Random Round* (1914), a musical game designed by Percy Grainger in which individual performers enter at will and play from a choice of material, and a number of works composed by Henry Cowell. The latter include *Mosaic Quartet – String Quartet No. 3* (1935), the five movements of which may be played in any order, and his ‘elastic’ works for dance, composed in the late 1930s, which feature a range of adjustable elements. Even so, Feldman’s earliest graphs do seem to have been the very first instrumental works in modern musical history in which pitches were specified imprecisely; given the central place traditionally accorded to pitch in Western classical music, this is their most radical feature.

Seventeen graphs, listed in Table I.1, have been published and these are the focus of the following discussion. All were published in Feldman’s lifetime; consequently, it is safe to assume that they were works he was happy to publicise. Several unpublished graphs are also discussed. The decision to ring-fence examination of two of these within an appendix was driven by their use of *sui generis* notations, meaning that they require special treatment. Nonetheless, these atypical graphs are significant, not only because they are Feldman’s most radical experiments in indeterminacy, but also because they were influential in shaping the course of the series and relaying its influence in Europe.

### Aims and approach

The many connections between these works argue against discussing each of them individually in turn; doing so would involve considerable duplication or an uncomfortable amount of cross-referencing. In addition, some graphs invite more commentary than others; reviewing them individually would highlight this imbalance. The alternative course followed here is to view them en masse from several thematic perspectives. This avoids unnecessary repetition and facilitates giving them differing degrees of attention. The biggest challenge it creates is how to introduce a sizeable number of individual works, some of which may be unfamiliar. This is addressed through a preliminary chronological survey, distributed over two chapters, that highlights some of each graph’s salient features. The first chapter addresses the *Projections* and *Intersections*, which are referred to collectively in this monograph as *early* graphs; the second addresses the *later* graphs – that is, all those that followed.

suggesting that the *Projections* were the first indeterminate works (‘Determining the indeterminate’, *Contemporary Music Review*, vol. 26, no. 2 (April 2007), 130).

Table I.1. *Feldman's published graph series, by completion date*

Graph	Instrumentation	Given completion date	Catalogue no.	Approx. duration <sup>9</sup>
<i>Projection 1</i>	Cello solo	1950	EP6945	2'50"
<i>Projection 2</i>	Flute, trumpet, violin, cello and piano	3 Jan 1951	EP6940	4'40"
<i>Projection 3</i>	Two pianos	5 Jan 1951	EP6961	1'30"
<i>Projection 4</i>	Violin and piano	16 Jan 1951	EP6913	4'40"
<i>Projection 5</i>	Three flutes, trumpet, three cellos and two pianos	1951	EP6962	2'10"
<i>Intersection 1</i>	Orchestra	Feb 1951	EP6907	12'30"
<i>Marginal Intersection</i>	Orchestra	7 Jul 1951	EP6909	5'50"
<i>Intersection 2</i>	Piano solo	Aug 1951	EP6922 <sup>10</sup>	9'00"
<i>Intersection 3</i>	Piano solo	Apr 1953	EP6915 <sup>11</sup>	2'20"
<i>Intersection 4</i>	Cello solo	22 Nov 1953	EP6960	3'00"
<i>Ixion</i>	Chamber ensemble	Aug 1958	EP6926	–
<i>Atlantis</i>	Chamber ensemble (two versions)	28 Sep 1959	EP6906	8'00"
<i>Ixion</i>	Two pianos	–	EP6926a	–
<i>... Out of Last Pieces'</i>	Orchestra	Mar 1961	EP6910	8'50"
<i>The Straits of Magellan</i>	Flute, horn, amplified guitar, harp, piano and double bass	Dec 1961	EP6919	4'50"
<i>The King of Denmark</i>	Percussion solo	Aug 1964	EP6963	5'10"
<i>In Search of an Orchestration</i>	Orchestra	–	UE15324	7'40"

<sup>9</sup> Based on indications of tempo in the published editions of the scores.

<sup>10</sup> Also included in EP6976. <sup>11</sup> Also included in EP6976.

A main aim is to reconstruct Feldman's own ideas about these works. Understanding his perspective, which was highly idiosyncratic, helps to explain why certain graphs have the properties they do and why the series developed as it did. On a more practical level, it helps clarify a number of ambiguities in his presentation, attributable to his penchant for unduly brief explanations. It also facilitates a better appreciation of how Feldman conceived these works being performed. No doubt there are those who are uncomfortable placing too much weight on this particular aspect of a composer's thinking, believing instead that performers should be free to impose their own tastes provided that they replicate the essential properties of the given work. Even so, Feldman's views are surely of interest even to those attracted to such a position, not only because of the well-known difficulties involved in distinguishing between constitutive properties of musical works and the non-constitutive preferences of composers, but also because of their utility as benchmarks.

Feldman's own words – from published and unpublished sources – are therefore centre stage in what follows.<sup>12</sup> These often employ a highly personal language, involving parallels with painting, which can be difficult to interpret. Despite that, they merit scrutiny, because they often reveal more about his perspective and music than a cursory review might suggest. Like some of his sketch materials, they also raise interesting questions, which this monograph seeks to address, about the relationships that exist between Feldman's music on graph paper and his works presented in other notational formats.

Another aim is to assess the strengths and weaknesses of his groundbreaking graph notation. Feldman developed his own multifaceted rationale for its use while remaining sensitive to what he regarded as its chief weaknesses. As will become clear, his reservations were instrumental in driving changes to the notation that had a profound impact on the resulting music, and they also played a part in his eventual return to more conventional means of expression. The critical assessment of the notation developed in what follows diverges from Feldman's own in a number of places, and argues that his residual concerns could have been addressed.

Historical context is also a focus. For example, the graphs are located within Feldman's wider output from the 1950s and 1960s and relative to events in his professional and personal life that affected their development. Inevitably, this involves discussion of a remarkable period of intense

<sup>12</sup> Most of the published sources are to be found in the following texts: Walter Zimmermann (ed.), *Morton Feldman Essays* (Cologne: Beginner Press, 1985); Friedman (ed.), *Give My Regards*; Chris Villars (ed.), *Morton Feldman Says: Selected Interviews and Lectures 1964–1987* (London: Hyphen Press, 2006); and Raoul Mörchen (ed.), *Morton Feldman in Middelburg: Words on Music* (Cologne: MusikTexte, 2008).

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mutual influence that operated between him and Cage during the early 1950s. It also highlights the equally remarkable influence exerted on him by contemporary currents in painting, which penetrated not only the way in which he spoke and wrote about his music, but also its ideological underpinnings and, indeed, its very essence. Feldman's close association with many leading painters of the time is well known, but the powerful impact of their art on his remains imperfectly understood. As will become clear, the works and working methods of Jackson Pollock and Robert Rauschenberg, in particular, deeply influenced the nature of his graph music. Sometimes, the discussion leans heavily on biographical data, but this is not a biography.<sup>13</sup> Such details are included either because they are useful in locating the graphs in context or because they are integral to appreciating an aspect of the series.

Feldman was notoriously coy on the subject of compositional method and generally preferred to portray himself as working intuitively, without premeditation or specifiable techniques, in a manner that he described as composing 'by ear'.<sup>14</sup> This volume aims to reveal more than Feldman may have been comfortable in disclosing. A detailed examination of his sketches and published graph scores points to his use of several compositional devices, including number strings, elastic form, collage, superimposition and, perhaps, proportional and rhythmic structures. It also suggests that his use of these devices was answerable to an over-arching holism that constrained global aspects of each graph. This is not to say that he composed systematically or even methodically; the techniques he employed affected only some elements of his graph music and many other aspects of it are not explicable in these terms. Others have tried to pinpoint elements of Feldman's compositional approach in these works. Rather than dealing with their views in the main text, I have opted instead to present my reservations in a second appendix.

The practice of performing the graphs is also addressed, not only through assessment of Feldman's non-notated preferences, but also via discussion of David Tudor's approach to playing this music. Tudor was a vitally important force in disseminating the burgeoning repercussions of Feldman's recourse to indeterminacy within the United States and internationally in the 1950s and 1960s, but analysis reveals facets of his

<sup>13</sup> For a summary biography, see Sebastian Claren, 'A Feldman chronology', in Villars (ed.), *Morton Feldman Says*, 255–75.

<sup>14</sup> 'Conversations with a young composer', unpublished typescript circa 1956, David Tudor Papers, Getty Research Institute, and Feldman's comments in Philip Guston, 'Conversation with Morton Feldman (1968)', in Clark Coolidge (ed.), *Philip Guston: Collected Writings, Lectures, and Conversations* (Berkeley: University of California Press, 2011), 92.

approach that appear incompatible with conclusions about Feldman's notation and his non-notated preferences reached elsewhere in this study.

Last, but not least, an attempt is made to describe this music from a listener's perspective. Much of it is justifiably termed 'pointillist', but this rather broad-brush description belittles important differences between individual graphs and, more importantly, between those from different periods. The discussion of this aspect of the series is not concentrated in a specific chapter, but is, instead, widely dispersed.

The overall aim of this monograph, therefore, is to provide a multi-faceted survey of this particular subset of Feldman's output, which highlights its inherent interest and credits it with a more pivotal role in the history of twentieth-century classical music than it is usually accorded. What emerges is not just an extended case study in musical indeterminacy – itself a desirable output, in my view – but also a picture of a groundbreaking series of musical works that deserves wider recognition.

## 1 Early graphs, 1950–1953

### Beginnings

In an article published in 1967, Feldman described the genesis of his graph music:

In the winter of 1950 I wrote what was probably the first piece of indeterminate music. John Cage, David Tudor and I were having dinner. I walked into the other room and wrote on graph paper some indeterminate music for cello – no notes, just indications of high, low, middle, short, long, loud, soft.<sup>1</sup>

Feldman had known Tudor since the mid-1940s, when he was studying composition with Stefan Wolpe and Tudor was studying with Wolpe and his wife Irma.<sup>2</sup> His friendship with Cage was forged later, after a chance encounter at Carnegie Hall, New York City, in January 1950,<sup>3</sup> shortly after Cage had returned from a stay in France. Christian Wolff, a high school student, arrived on the scene a few weeks later, initially as Cage's student. The four friends – Cage, Feldman, Tudor and Wolff – met frequently in the ensuing months, assisted by the fact that Feldman – by then twenty-four years of age and working, during the day, in his father's clothing manufacturing company – moved into the same New York City apartment block as Cage. As Wolff recalled, 'basically we just hung around together for a year or so'.<sup>4</sup>

In an interview conducted in 1983, Feldman gave a more picturesque account of the beginnings of his graph music:

I was living in the same building as John Cage and he invited me to dinner. And it wasn't ready yet. John was making wild rice the way most people don't

<sup>1</sup> 'The avant-garde: progress or stalemate?', D27.

<sup>2</sup> For Feldman's early contacts with Tudor, see John Holzaepfel, David Tudor and the Performance of American Experimental Music, 1950–1959, unpublished PhD thesis, City University of New York (1994), 9.

<sup>3</sup> For Feldman's account of this meeting, see 'Liner notes' [1962], in Friedman (ed.), *Give My Regards*, 4. Elsewhere, Feldman remembered having seen Cage previously at a 'soirée' organised by the Wolpes ('Conversation about Stefan Wolpe, Austin Clarkson, 13 November 1980', in Villars (ed.), *Morton Feldman Says*, 98).

<sup>4</sup> 'Christian Wolff', interview, in Geoff Smith and Nicola Walker Smith (eds.), *American Originals* (London: Faber and Faber, 1994), 253.

know how it should be made. That is, just waiting for boiling water and then putting new boiling water into the rice and then having another pot boiling and then draining the rice, etc, etc, so we were waiting a long time for the wild rice to be ready. It was while waiting for the wild rice that I just sat down at his desk and picked up a piece of notepaper and started to doodle. And what I doodled was a freely drawn page of graph paper – and what emerged were high, middle, and low categories. It was just automatic – I never had any conversation about it heretofore, you know – never discussed it. [...] Actually I didn't have any kind of theory and I had no idea what was going to emerge, but if I wasn't waiting for that wild rice, I wouldn't have had those wild ideas.<sup>5</sup>

These accounts are broadly consistent with Cage's recollections. In a conversation with Feldman recorded in 1966, Cage recalled:

it was your music, really, that opened up everything, your piece, what was it called, I think the first one was for piano [...] David Tudor and I were in the other room. You left us and you wrote this piece on graph, giving us this freedom of playing in those three ranges – high, middle, and low – and then we went in and played the piece, and it was then that the musical world changed.<sup>6</sup>

In lectures delivered in 1988–9, Cage described the events in question as follows:

in the place where i lived [...] morton feldman went into the room with the piano and i stayed at my desk which was in the bedroom with david tudor shortly morton feldman came back with his first piece of graph music where on graph paper he simply put numbers and indicated high middle and low how many high notes how many middle notes how many low notes and nothing else there were squares of the graph that he left empty so there were no notes there at all after he showed it to me and to david tudor david tudor went to the piano and played it[.]<sup>7</sup>

It is not entirely clear whether the sketch that Feldman produced in Cage's apartment was an early version of *Projection 1*, the first of the published graphs. In Feldman's earlier account quoted above, he remembered the sketch as for cello, suggesting that it may have been, but his later account portrays what he produced as more embryonic in character and possibly not conceived with a particular instrument in mind. Cage, unlike

<sup>5</sup> 'An interview with Morton Feldman, Jan Williams, 22 April 1983' [1983], in Villars (ed.), *Morton Feldman Says*, 153.

<sup>6</sup> John Cage and Morton Feldman, *Radio Happenings I–V: Recorded at WBAI New York City, July 1966–January 1967* (Cologne: MusikTexte, 1993), 17.

<sup>7</sup> *I–VI* (Cambridge, MA: Harvard University Press, 1990), 238–40, with Cage's punctuation.