Parametric Study

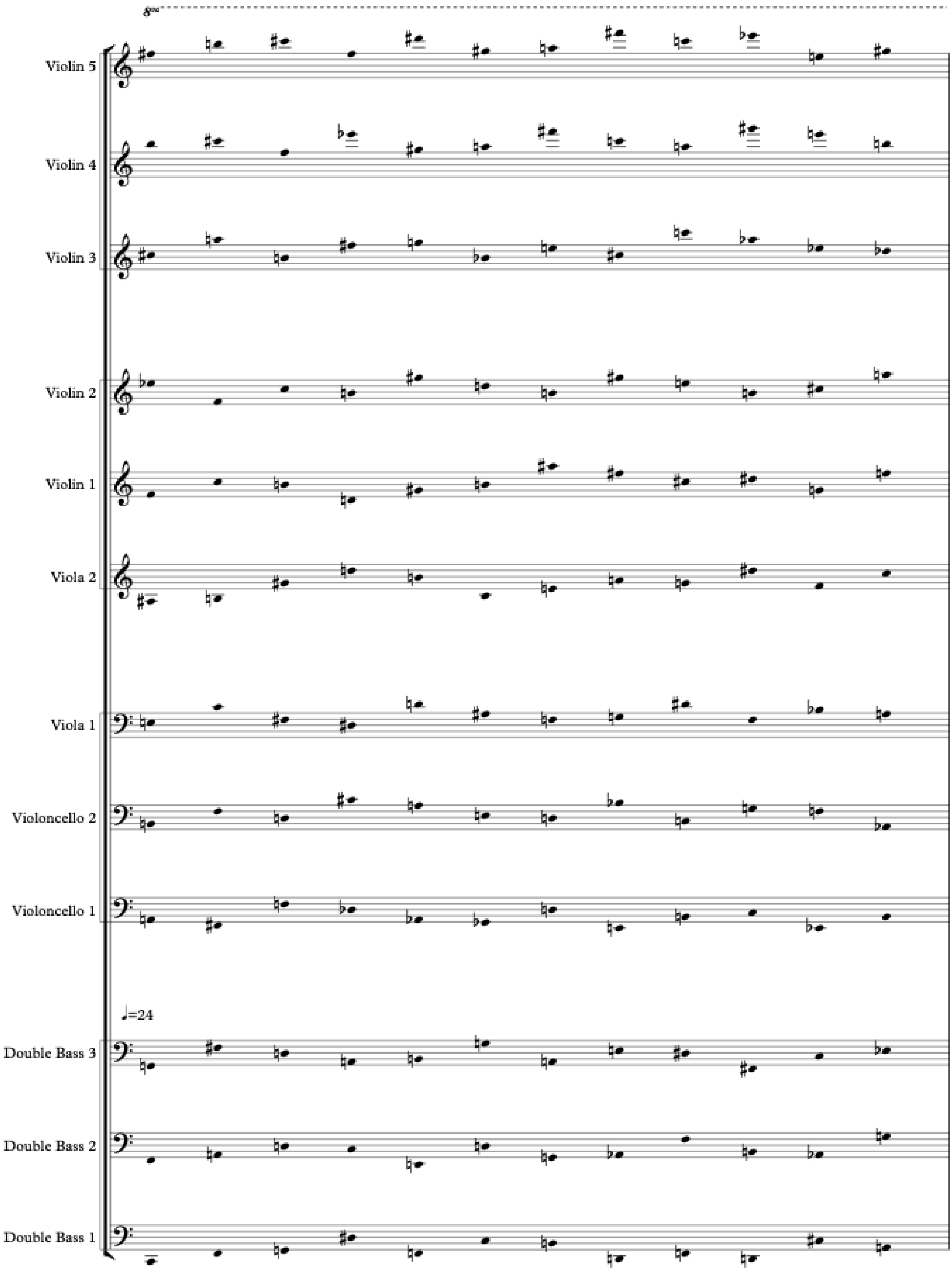
The starting material of this piece is taken from a larger-scale work that I am currently developing. I became interested in pan-intervallic music after discovering Elliot Carter's work in the string quartet medium, and discovered through reviewing literature on the composer's canon of works that Carter's organisation of time was closely linked to the application of intervals in these works. I saw that I could conceive of a chord as a piece of 'code' that gives the sequence of intervals that form its makeup, and imagined a compositional method that would throw up ever-varying combinations of code to produce chords of differing quality.

Beginning with a twelve-note, all-interval chord, I cycled the series of intervals that it produced to give a set of twelve intervallic sequences. Applying one sequence to each note of the original chord, I produced the pitch series shown in Example Six. My study takes the top three series, lowered by an octave, to create a wind trio.

My method of working involves adjusting the series proportionally to create periods of alignment. I take as an organisational principle the audible effect of two or more disparate parts settling into a single tempo after a period of asynchrony, as opposed to, say, the pitch dissonance and consonance that gives tonal music structure. Each set of three instruments in Example Six is assigned a variation of the prime sequence that determines the intervals that will occur *between* instruments at points of alignment. I assigned this trio the retrograded inversion transformation, which takes the form:

m6, m2, M6, TT, m3, M7, 4, M2, M3, m7, 5

Example Six: Set of twelve pitch series.

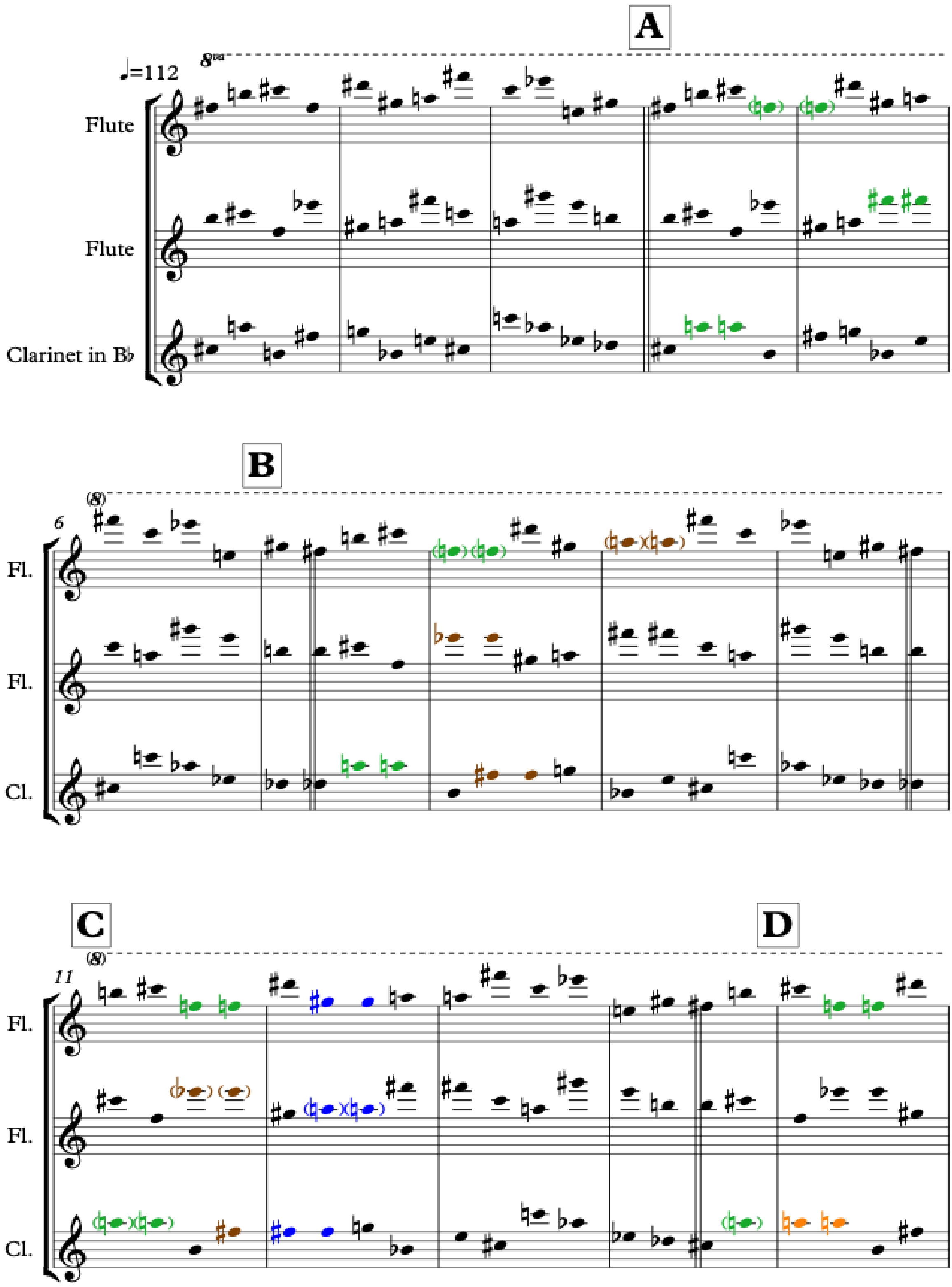


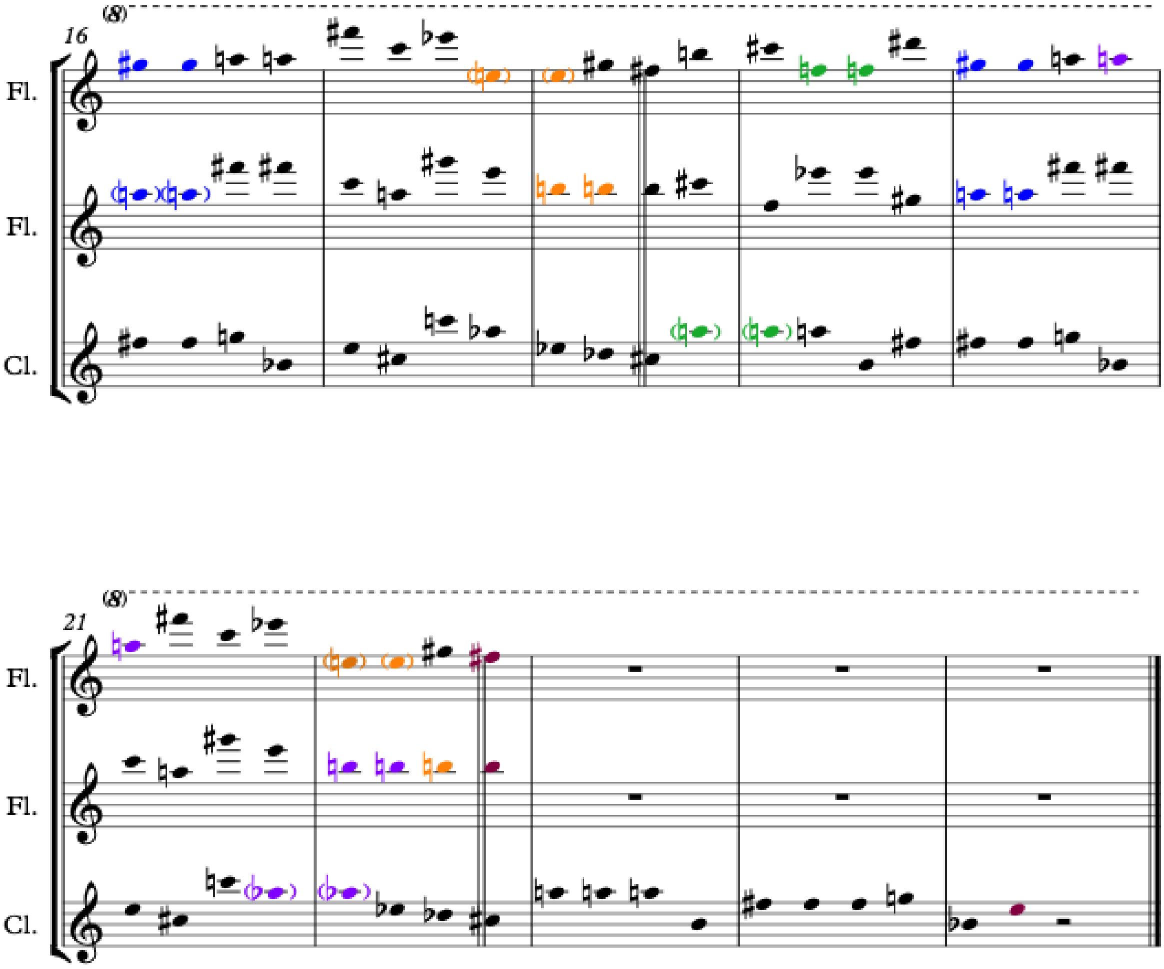
Two intervals are assigned to each complete cycle of the twelve-note series, meaning that the three parts will align to form a triad. I determine the notes required from each part to meet the intervals needed, and which part will be aligned *to*. At each alignment, each note of the triad is repeated, such that each subsequent iteration of the series contains an additional note. Example Seven shows the complete pitch series for the trio, colour coded to show points of alignment. Bracketed notes show the position that alignments will take place at.

Where instruments need to change tempo to meet the alignment, a deceleration of acceleration takes place. I devised a spreadsheet that allows me to notate these changes in tempo. Example Eight shows a sheet that produces time values given an initial tempo and a rate of deceleration (x). I use trial and error to determine an x value that produces *n* notes in the amount of time required to meet an alignment. Then, using the second sheet, I can determine how best to translate this into notation given the divisions of a bar available to the composer. Where no change in tempo is necessary, I divide the time available by the notes needed to fit into it to give a sounding tempo. Continuing the idea of proportions, I applied the acceleration calculator the piece as a whole to keep every section the same length, using a series of tempo modulations. The instrument keeping master tempo varies throughout the piece.

Like my 'codified' chords, this organisational method produces a lot of information that can be reduced to data. My research elsewhere in my studies has led to an interest in the concept of parameters in contemporary music, particularly the fact that what constitutes the idea of a musical parameter in twentieth-century music was widened to encompass more than pitch, duration and texture alone. Whether the 'intensive parametric polyphony' of Brian Ferneyhough's works of the

Example Seven: Complete pitch series for *Parametric Study*




(8)
16
Fl.
Fl.
Cl.
(8)
21
Fl.
Fl.
Cl.

Example Eight: Deceleration calculator

Beats in bar:	4
BPM:	60
x:	1.265376012
y:	1

Distance	**Position**	**Measure**	**Position in measure**
0	0	0	0
1	1	1	0
1.265376012	2.265376012	0.566344003	0.566344
1.601176451	3.866552463	0.966638116	0.9666381
2.026090272	5.89264273568892	1.473160684	0.4731607
2.563766029	8.456408764	2.114102191	0.1141022
3.244128033	11.7005367968817	2.925134199	0.9251342
4.105041792	15.80557859	3.951394647	0.9513946
5.194421411	21.000000000000200	5.25	0.25
6.572896249	27.57289625	6.893224062	0.8932241
8.317185242	35.89008149	8.972520373	0.9725204
10.52436669	46.41444818	11.60361205	0.603612
13.31728115	59.73172933584550	14.93293233	0.9329323
16.85136811	76.5830974491616000	19.14577436	0.1457744
21.32331698	97.90641443	24.47660361	0.4766036
26.9820138	124.8884282	31.22210706	0.2221071
34.14239301	159.0308212	39.75770531	0.7577053
43.2029651	202.2337863	50.55844658	0.5584466
54.66799568	256.9017820235000	64.22544551	0.2254455

		7.38461538																																	
		0.92307692																																	
			Highli																																
Starting tempo	146.25			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**
			1/2	0	0.821																														
Crotchet duration	0.41025641	1.64102564	**1/3**	0	0.547	1.094																													
			1/4	0	0.41	0.821	1.231																												
			1/5	0	0.328	0.656	0.985	1.313																											
Plus ___ division			**1/6**	0	0.274	0.547	0.821	1.094	1.368																										
Minus ____ division	16		**1/7**	0	0.234	0.469	0.703	0.938	1.172	1.407																									
			1/8	0	0.205	0.41	0.615	0.821	1.026	1.231	1.436																								
New crotchet value	0.38461538		**1/9**	0	0.182	0.365	0.547	0.729	0.912	1.094	1.276	1.459																							
New tempo	156	312	**1/10**	0	0.164	0.328	0.492	0.656	0.821	0.985	1.149	1.313	1.477																						
			1/11	0	0.149	0.298	0.448	0.597	0.746	0.895	1.044	1.193	1.343	1.492																					
			1/12	0	0.137	0.274	0.41	0.547	0.684	0.821	0.957	1.094	1.231	1.368	1.504																				
			1/13	0	0.126	0.252	0.379	0.505	0.631	0.757	0.884	1.01	1.136	1.262	1.389	1.515																			
			1/14	0	0.117	0.234	0.352	0.469	0.586	0.703	0.821	0.938	1.055	1.172	1.289	1.407	1.524																		
			1/15	0	0.109	0.219	0.328	0.438	0.547	0.656	0.766	0.875	0.985	1.094	1.203	1.313	1.422	1.532																	
			1/16	0	0.103	0.205	0.308	0.41	0.513	0.615	0.718	0.821	0.923	1.026	1.128	1.231	1.333	1.436	1.538																
			1/18	0	0.091	0.182	0.274	0.365	0.456	0.547	0.638	0.729	0.821	0.912	1.003	1.094	1.185	1.276	1.368	1.459	1.55														
			1/20	0	0.082	0.164	0.246	0.328	0.41	0.492	0.574	0.656	0.738	0.821	0.903	0.985	1.067	1.149	1.231	1.313	1.395	1.477	1.559												
			1/24	0	0.068	0.137	0.205	0.274	0.342	0.41	0.479	0.547	0.615	0.684	0.752	0.821	0.889	0.957	1.026	1.094	1.162	1.231	1.299	1.368	1.436	1.504	1.573								
			1/28	0	0.059	0.117	0.176	0.234	0.293	0.352	0.41	0.469	0.527	0.586	0.645	0.703	0.762	0.821	0.879	0.938	0.996	1.055	1.114	1.172	1.231	1.289	1.348	1.407	1.465	1.524	1.582				
			1/30	0	0.055	0.109	0.164	0.219	0.274	0.328	0.383	0.438	0.492	0.547	0.602	0.656	0.711	0.766	0.821	0.875	0.93	0.985	1.039	1.094	1.149	1.203	1.258	1.313	1.368	1.422	1.477	1.532	1.586		
			1/32	0	0.051	0.103	0.154	0.205	0.256	0.308	0.359	0.41	0.462	0.513	0.564	0.615	0.667	0.718	0.769	0.821	0.872	0.923	0.974	1.026	1.077	1.128	1.179	1.231	1.282	1.333	1.385	1.436	1.487	1.538	1.59

1970s,[1] or compositions with the 'totality of sonic phenomena' of the early spectralist movement,[2] composers have found it possible to apply compositional techniques to temporal density, spatial density, dynamics, register and timbre among other 'secondary' parameters.[3] To explore the possible applications of this kind of thinking, I used information from my wind trio to form a direct 'input' to generate material for a fourth instrument. I chose a string instrument to allow for contrasts in texture and tone quality.

Example Nine shows the table I used to codify the trio. The table allows me to quickly extract information on pitch, density, range, register and a variety of other parameters. Coloured pitches show the registral range of each instrument, taken from standard orchestral guidelines. Coloured note values show articulation—after inputting durations and pitches for the wind trio, I filtered pitches by setting the pitches at the mid-point between alignments for each instrument to slap tongue. The progression in and out of these pitches is different for each instrument, and changes throughout the piece. Only a third of the clarinet's pitches are heard *forte* and slurred during section one, for example, whilst two thirds of flute one's pitches are heard clearly, resulting in a more flute-heavy texture. More clarinet pitches are heard as the piece develops, ending with three fifths of its pitches of each sequence heard clearly in the final section. I set the following input/output arrangement during section one:

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[1] Lois Fitch, *Brian Ferneyhough* (Bristol: Intellect, 2013), p. 6.
[2] Tristan Murail, "The Revolution of Complex Sounds", *Contemporary Music Review* 24, no. 2–3 (2005), p. 124.
[3] Patricia Howland, "Formal Structures in Post-Tonal Music", *Music Theory Spectrum* 37, no. 1 (Spring 2015), p. 71.

Example Nine: ‘Codification’ of first six bars of section one of wind trio.

Bars 1–3:

		1								2								3							
	Master tempo	102																							
Flutes	Pitch	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
	Note value	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
	(Cumulative)	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1
	Pitch	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Note value	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
	(Cumulative)	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1
Clar.	Pitch	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Note value	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.093	0.093
	(Cumulative)	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.874	0.998
		0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1
		0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1
		0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.874	0.998
		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.124	0.124
		0.125	**0.25**	**0.375**	**0.5**	**0.625**	**0.75**	**0.875**	**1**	**0.125**	**0.25**	**0.375**	**0.5**	**0.625**	**0.75**	**0.875**	**1**	**0.125**	**0.25**	**0.375**	**0.5**	**0.625**	**0.75**	**0.874**	**0.999**
Data	Average	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
	Range	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	Avg. dist. btwn notes	0.125								0.125								0.124916667							
	Notes in bar	24								24								24							

Bars 4–5:

		4								5								
Flutes	Pitch	28	28	28	28	28	28	28	28	30	30	30	30	30	30	30	30	
	Note value	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.094	0.094	
	(Cumulative)	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	
	Pitch	18	18	18	18	18	18	18	18	10	10	10	10	10	10	10	10	20
	Note value	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
	(Cumulative)	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.111	0.221	0.332	0.443	0.553	0.664	0.775	0.885	0.996
Clar.	Pitch	14	14	14	14	14	14	14	14	4	4	4	4	4	4	4	4	
	Note value	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.1	0.1	0.1	0.067	0.067	0.067	0.067	0.034	
	(Cumulative)	0.124	0.248	0.372	0.496	0.62	0.744	0.868	0.992	0.133	0.267	0.4	0.533	0.667	0.8	0.934	1.001	
		0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	
		0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	0.111	0.221	0.332	0.443	0.553	0.664	0.775	0.885	0.996
		0.124	0.248	0.372	0.496	0.62	0.744	0.868	0.992	0.133	0.267	0.4	0.533	0.667	0.8	0.934	1.001	
		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	
		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
		0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.134	
		0.125	**0.249**	**0.374**	**0.499**	**0.623**	**0.748**	**0.873**	**0.997**	**0.123**	**0.245**	**0.368**	**0.49**	**0.613**	**0.735**	**0.858**	**0.98**	**1.103**
Data	Average	-0	-0	-0	-0	-0	-0	-0	-0	4E-04	4E-04	4E-04	-0	5E-04	5E-04	5E-04	7E-04	
	Range	14	14	14	14	14	14	14	14	26	26	26	26	26	26	26	26	0
	Avg. dist. btwn notes	0.124666667								0.122559216								
	Notes in bar	24								25								

Bars 6–7:

		6									7					
Flutes	Pitch	23	23	23	23	23	23	23	23		32	32	32	32	32	32
	Note value	0.094	0.094	0.094	0.094	0.094	0.094	0.094	0.094		0.094	0.094	0.094	0.094	0.063	0.063
	(Cumulative)	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1		0.125	0.251	0.376	0.501	0.626	0.751
	Pitch	20	20	20	20	20	20	20	13	13	13	13	13	13	13	13
	Note value	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
	(Cumulative)	0.111	0.221	0.332	0.443	0.553	0.664	0.775	0.885	0.996	0.111	0.221	0.332	0.443	0.553	0.664
Clar.	Pitch	4	11	11	11	11	11	11	11		11	12	12	12	12	12
	Note value	0.034	0.067	0.067	0.067	0.067	0.067	0.067	0.067		0.067	0.067	0.067	0.067	0.067	0.067
	(Cumulative)	0.067	0.201	0.335	0.469	0.603	0.737	0.871	1.005		0.134	0.268	0.402	0.536	0.67	0.804
		0.125	0.25	0.375	0.5	0.625	0.75	0.875	1		0.125	0.251	0.376	0.501	0.626	0.751
		0.111	0.221	0.332	0.443	0.553	0.664	0.775	0.885	0.996	0.111	0.221	0.332	0.443	0.553	0.664
		0.067	0.201	0.335	0.469	0.603	0.737	0.871	1.005		0.134	0.268	0.402	0.536	0.67	0.804
		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125		0.125	0.125	0.125	0.125	0.125	0.125
		0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
			0.134	0.134	0.134	0.134	0.134	0.134	0.134		0.134	0.134	0.134	0.134	0.134	0.134
		0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Data	Average	0.082	0.123	0.123	0.12	0.123	0.123	0.123	0.123		0.123	0.123	0.123	0.12	0.123	0.123
	Range	19	12	12	12	12	12	12	12	0	21	20	20	20	20	20
	Avg. dist. btwn notes															
	Notes in bar	25									25					

Wind trio	**Viola**
Range	Pitch
Tessitura	Bowing position
Articulation	Dynamic

All effects are calculated at the point at which a change in value takes place in the wind trio. I applied a 'delay' to the viola, so that changes take place one-beat after changes in the trio, as well as a soft 'attack' so that changes in pitch occur via *glissando* in the space of a quaver. Range values were adjusted to bring them between zero and nine, such that the viola's pitch material roughly covers the space between it and the clarinet's lowest note. The viola takes on a textural role in this section, and as such I have notated changes in colour and dynamic to the most subtle degree allowed for by my process. Example Ten shows some of my results.

In section two, the viola plays *glissandi*. The input/output arrangement is as follows:

Wind trio	**Viola**
Range	Pitch (Until tempo change)
Tessitura	Bowing position (until tempo change)
Articulation	Dynamic
Note count	Duration
Average note distance	Delay

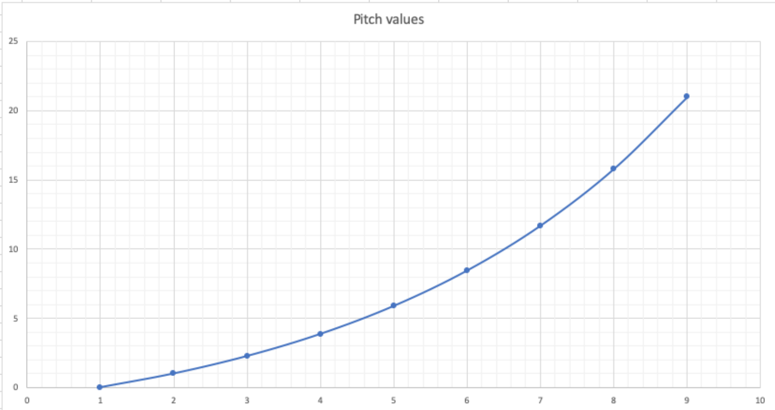
At the tempo change at b. 23, range and tessitura inputs switch. Note counts per bar are translated into durations, whilst the delay of notes is determined by the average spacing between notes in the trio, calculated each time a new note value is introduced. Pitches occur each time the range value changes, whereupon the viola

Example Ten: Viola pitch, dynamic and bowing material for section one.

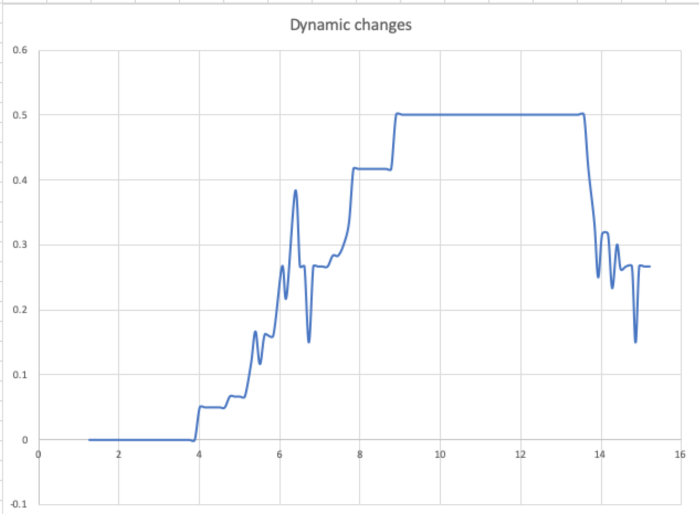
x=1.265376012

	Log values
1	0
2	1
3	2.265376
4	3.8665525
5	5.8926427
6	8.4564088
7	11.700537
8	15.805579
9	21

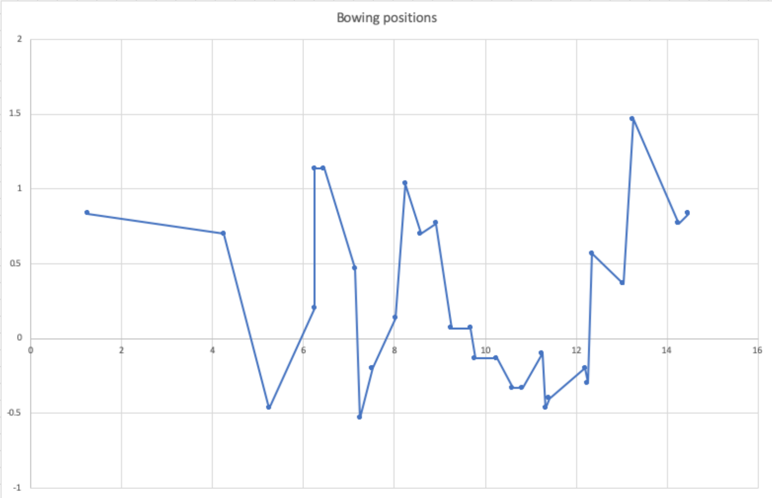
Beat	+0.25	Value	Pitch		
				0	C
4.00	4.25	7	5.4	1	C#
5.00	5.25	19	8.6	2	D
6.00	6.25	12	7.0	3	D#
6.07	6.32	5	4.6	4	E
7.00	7.25	14	7.6	5	F
7.13	7.38	13	7.4	6	F#
8.00	8.25	6	5.0	7	G
8.20	8.45	15	7.8	8	G#
9.00	9.25	16	8.0	9	A
9.29	9.54	11	6.8		
10.00	10.25	20	8.8		
10.25	10.50	22	9.5		
11.00	11.25	16	8.0		
11.60	11.85	5	4.6		
12.00	12.25	8	5.8		
12.80	13.05	12	7.0		
13.00	13.25	1	2.0		
14.00	14.25	10	6.5		



	1	2	3	Average	0.25	1-
1		1		1	1.25	0
1.125		1		1	1.375	0
1.25		1		1	1.5	0
1.375		1		1	1.625	0
1.5		1		1	1.75	0
1.625		1		1	1.875	0
1.75		1		1	2	0
1.875		1		1	2.125	0
2		1		1	2.25	0
2.125		1		1	2.375	0
2.25		1		1	2.5	0
2.375		1		1	2.625	0
2.5		1		1	2.75	0
2.625		1		1	2.875	0
2.75		1		1	3	0
2.875		1		1	3.125	0
3		1		1	3.25	0
3.125		1		1	3.375	0
3.25		1		1	3.5	0
3.375		1		1	3.625	0
3.5		1		1	3.75	0
3.625		1		1	3.875	0
3.75		1		0.95	4	0.05
3.875		1		0.95	4.125	0.05
4		1		0.95	4.25	0.05
4.125		1		0.95	4.375	0.05
4.25		1		0.95	4.5	0.05
4.375		1		0.95	4.625	0.05
4.5		1		0.933	4.75	0.067
4.625		1		0.933	4.875	0.067
4.75		1		0.933	5	0.067
4.875		1		0.933	5.125	0.067
5.028		0.85		0.883	5.278	0.117
5.138		0.85		0.833	5.388	0.167
5.25	1			0.883	5.5	0.117



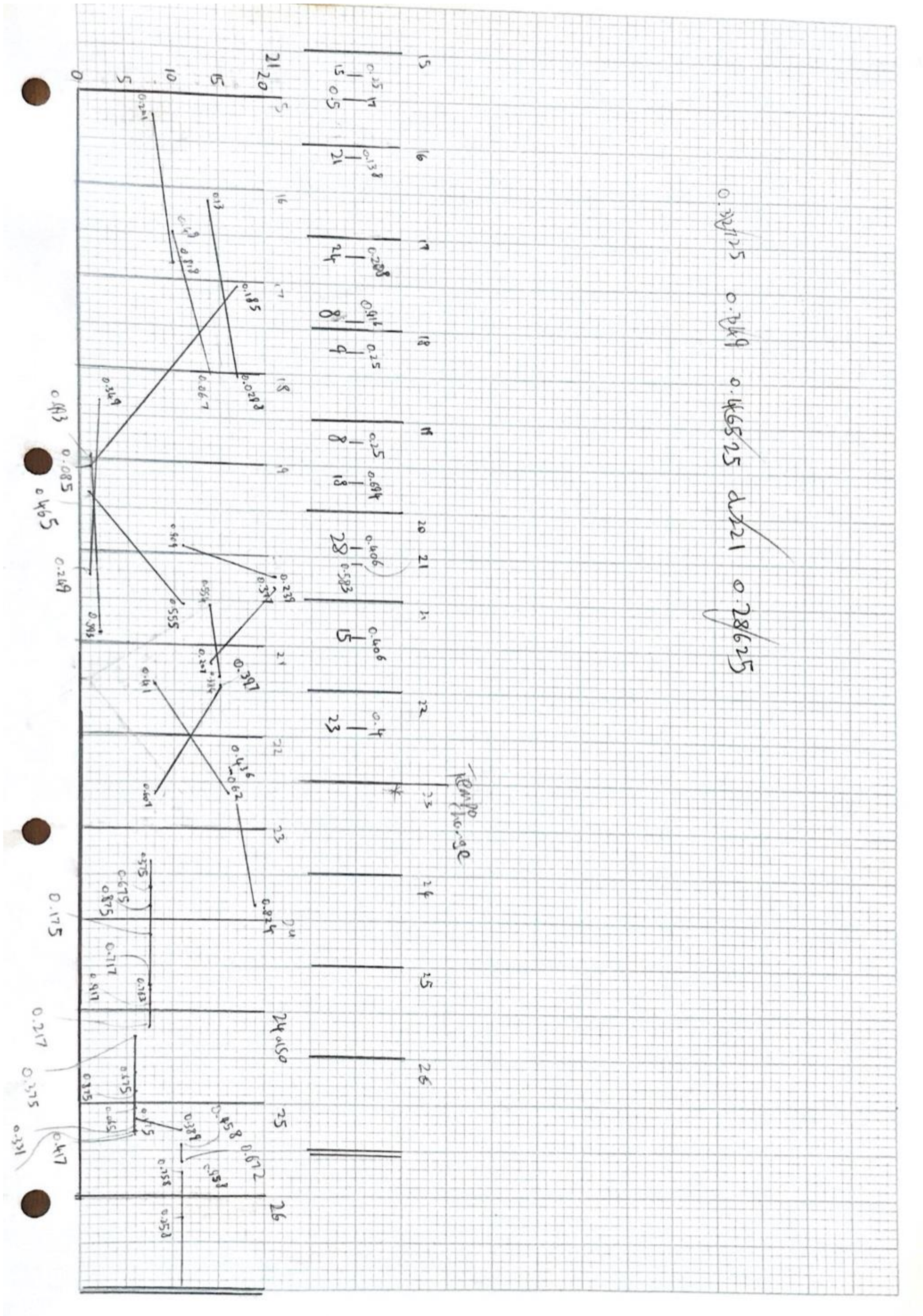
	1	2	3	Mean		Mean
0	1.1	1.4	0	0.8333	1.25	0.833333333
4	-1.2	1.8	1.5	0.7	4.25	0.7
5	-1.4	0	0	-0.4667	5.25	-0.466666667
5.996		2		0.2	6.246	0.2
6	1.4			1.1333	6.25	1.133333333
6.201			0	1.1333	6.451	1.133333333
6.885		0		0.4667	7.135	0.466666667
7	-1.6			-0.5333	7.25	-0.533333333
7.268			1	-0.2	7.518	-0.2
7.775		1		0.1333	8.025	0.133333333
8	1.1			1.0333	8.25	1.033333333
8.336			0	0.7	8.586	0.7
8.663		1.2		0.7667	8.913	0.766666667
9	-1			0.0667	9.25	0.066666667
9.429			0	0.0667	9.679	0.066666667
9.521		1.6		-0.1333	9.771	-0.133333333
10	-2			-0.1333	10.25	-0.133333333
10.35		1		-0.3333	10.6	-0.333333333
10.571			0	-0.3333	10.821	-0.333333333
11	-1.3			-0.1	11.25	-0.1
11.075			-1.1	-0.4667	11.325	-0.466666667
11.15		1.2		-0.4	11.4	-0.4
11.944		1.8		-0.2	12.194	-0.2
12	-1.6			-0.3	12.25	-0.3
12.095			1.5	0.5667	12.345	0.566666667
12.781		1.2		0.3667	13.031	0.366666667
13	1.7			1.4667	13.25	1.466666667
14	1.1		0	0.7667	14.25	0.766666667
14.219		1.4		0.8333	14.469	0.833333333



glissandos to the next rage value across the duration and subject to the delay value of the point in time in which it falls. Example Eleven shows my resulting calculations for the section.

In section three, outputs come from individual instruments. Wind articulation determines viola articulation directly, and note durations are determined by sounding tempo. Notes are struck in the violin at each change in pitch. As well as this, delay decreases steadily throughout the piece: the articulation ratios of each instrument in section three (three fifths for flute one, one half for flute two and two fifths for clarinet) determine the output delay values in beats for each instrument at the outset of the section. These values decrease linearly to zero in the final bar of the section. Taking delay as x values and bar numbers as *y* values, the temporal position of each pitch yields a delay value that determines its placement. Notes are always displaced by subsequently struck notes except where it is possible for two to be sustained at once.

Example Eleven: *Glissandi* calculations for section two.



The viola rests during section four to provide a variance in texture, then doubles only the loudest wind instruments during section five. In the final section, section three’s techniques are repeated with some inputs switched. The degree of integration between the wind ensemble and viola varies throughout the piece.

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