

Lecture on MA

Robert Morris



Examples

MA is as selfless as I am Music and Thoughts on Symmetry, Structure and Silence

Robert D. Morris

Ex. 1 An array column and its realization in MA.

Array column:

D - F - F#

D# - G - G#

A#

B - A - E - C# - C

Musical Realization:

<p>D D# E A A# B (6-6)</p>	<p>D D# E F A A# (6-38)</p>	<p>C C# F F# G G# (6-38)</p>
	<p>C C# D F F# G (6-6)</p>	

The array column contains four ordered segments of pitch-classes.
The realization orders the segments to produce members of the
complementary SCs 6-6[012567] and 6-38[012367].

Ex. 2 Arrays in MA

A Array (12 by 77, all-partition in six blocks)

Block A1:

lyne#	row	1	2	3	4	5	6	7	8	9	10	11	12	13
1	T ₀	0156				4		B	8	79	9	2A3		
2	T ₁ I			1087				9	25	64	4B		3A	A
3	T ₂				237	8			61A9B40			5		5
4	T ₃ I	32				A9B	47	8			61	1	50	0
5	T ₄	4					59A830B162				7			7
6	T ₅ I				540B169A8				3		3		72	
7	T ₆		67B0A52			13					8	849		
8	T ₇ I	7						62		138B0A5			94	
9	T ₈	8	91			2		0743			5A	6		B
10	T ₉ I	9	843					5A1		2	2	07B	B6	6
11	T _A			AB3429		65			7		0		81	
12	T _B I	BA		65		70								342918

42₂1₄ 732 642 831 32₃1₃ A2 432₂1₃ 721₃ 72₂1 2₃1₆ 3₃1₃ 2₆ 61₆

Block A2:

lyne#	row	1	2	3	4	5	6	7	8	9	10	11	12
1	RT ₃	615		0	A								B279843
2	T ₇				7	801	B	63		24	95		A
3	RT ₅		8372					0149BA		6			5
4	T ₉	9A2			318			5			46	B7	0
5	RT ₇					A594236B				1	087		
6	T _B				B		0453A	7	68192				
7	RT ₉	07B			645			8			132	A9	
8	T ₁			12675						098A3B		4	
9	RT _B						29186		7A3540B				
10	T ₃	348			9	7		2			BA	051	6
11	RT ₁			4B3A89	0					57		62	1
12	T ₅		56AB9410		2		7					38	

3₄ 84 651 3₂1₆ 831 5₂1₂ 621₄ 75 62₂1₂ 3₂2₃ 32₄1 71₅

Block A3:

lyne#	row	1	2	3	4	5	6	7	8	9	10	11	12	13
1	T ₆ I					6					51027AB9483			
2	RT _A I	708	1		32							B645	59A	
3	T ₈ I				87		324901		B6A5					
4	RT ₀ I		9	2		A3541							867B0	
5	T _A I	A9	5		46	B2				31807		7		
6	RT ₂ I	B	4	057		6			3			A8912		
7	T ₀ I		0B768						814	5		3		A29
8	RT ₄ I	162	2			798	5		0	AB				B34
9	T ₂ I							2198A367504B						
10	RT ₆ I			3849	9		BA7			2		0		0156
11	T ₄ I	43	3		BA05		8		972	6	6		1	
12	RT ₈ I	5	A	A6B 1	1	0				94			423	78

3₂2₂1₂ 51₇ 4₂31 42₃1₂ 5321₂ 631₃ C 43₂1₂ 52₂1₃ B1 543₁ 53₂1 43₂2

Ex. 2 continued

Block A4:

lyne#	row	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	RT3I	05		168				7		74B	B			9A23	
2	RTA				1807	75				69			243		3BA
3	RT5I			273		8A9		6			61	B04			5
4	RT0	3	A2		29		978B465					5			10
5	RT7I			495A0B				B83		31				1	267
6	RT2		50		4B			9				A16873 2			
7	RT9I	6	6B7				021A	5			34				489
8	RT4	7				261B03				8	A9			54	
9	RTBI	81924				4	3	0			07		56AB		
10	RT6		94831					12		25A0				0B76	
11	RT1I	A						A	A3B465		52	9	97801		
12	RT8	B			6A53			4	702198		8			8	

521⁵ 432²1 63² 42²2 6321 741 321⁷ 6² 432²1 25¹2 731² 543 42²1² 3³21

Block A5:

lyne#	row	1	2	3	4	5	6	7	8	9	10	11	12	13
1	T0	0	1	56	4				B	8792	A			3
2	RTA1	7		08132		B6					459	A		A
3	T2	2						37861A9B40			0	5		5
4	RT0I	9	2			A354 1	8				8		6	7B0
5	T4	4			59A83					0B16		627	7	
6	RT2I		B405		76				3A					8912
7	T6	6	7		B0		A	5			2	13849	9	
8	RT4I	1	6			2798	5					0	AB3 4	4
9	T8	8	9		12	0	7			435A	6B	B		
10	RT6I	3	8	49BA 7				2					2015	6
11	TA	AB	3						429657081		1			
12	RT8I	5	A				6B109423				37		8	

21^A 41⁸ 5²2 52³1 5421 81⁴ A1² 921 4³ 32²1⁵ 531⁴ 4²1⁴ 431⁵

Block A6:

lyne #	row	1	2	3	4	5	6	7	8	9	10	11	12
1	RT3	6		1							50AB27984		3
2	T1I	1		0	8					792564B3			A
3	RT5	8	3	7	20				149B	A	6	5	
4	T3I	3	2	A9	B			47				86	150
5	RT7	A	5		9		4236B1			08			7
6	T5I	5	40			B1		69	A8			37	2
7	RT9	0	7	B645			8			1	3	2A	9
8	T7I	7	6	2	1			38B0A5				9	4
9	RTB	2	91	8	67A				35			40	B
10	T9I	9	8		435		A	12	07			B	6
11	RT1	4	B	3		A8	9057		62			1	
12	TBI	B	A			65703429					1		8

1¹² 2²1⁸ 421⁴ 3²21⁴ 82² 641² 62³ 42⁴ 821² 91³ 2⁴1⁴ 31⁹

Ex. 2 continued

B Arrays (4 rows by 4 aggregates)
used as the basis for 12 by 16 B1, B2, and B3 arrays

Basis for B1 array:

lyne#	row	1	2	3	4
1	T ₀	015	64B	879	2A3
2	T ₉	9A2	318	546	B70
3	T ₆	67B	0A5	213	849
4	T ₃	348	972	BA0	516

3⁴ 3⁴ 3⁴ 3⁴

Basis for B2 array:

row	1	2	3	4
T ₀	0	156	4B879	2A3
T _{2I}	219	8	A36	7504B
T ₃	348	972BA	051	6
T _{BI}	BA657	034	2	918

53²1 53²1 53²1 53²1

Basis for B3 array:

lyne#	row	1	2	3	4
1	T ₀	015	6	4B879	2A3
2	T _{3I}	32A	9B478	6	150
3	RT _{9I}	6B7	0	21A53	489
4	RT ₆	948	3125A	0	B76

3⁴ 5²1² 5²1² 3⁴

Basis for B3 array:

row	1	2	3	4
T ₀	015	64	B879	2A3
RT _{6I}	384	9BA7	20	156
RT _{9I}	6B7	02	1A53	489
T ₉	9A2	3185	46	B70

3⁴ 4²2² 4²2² 3⁴

E Array (8 by 8 array; rows at 1:2:4 completion ratio)

E1 array:

lyne#	row	1	2	3	4	5	6	7	8
1	T ₀	01		56	4B	87	92		A3
2	RT _{5I}	27	38		A9	61		B0	45
3	T ₅	56	AB94	1027	38				
4	T _B					B0	453A	7681	92
5	RT ₁	4B3A89	057621						
6	RT _{6I}			3849BA	720156				
7	RT ₇					A59423	6B0187		
8	RT _{0I}							92A354	1867B0

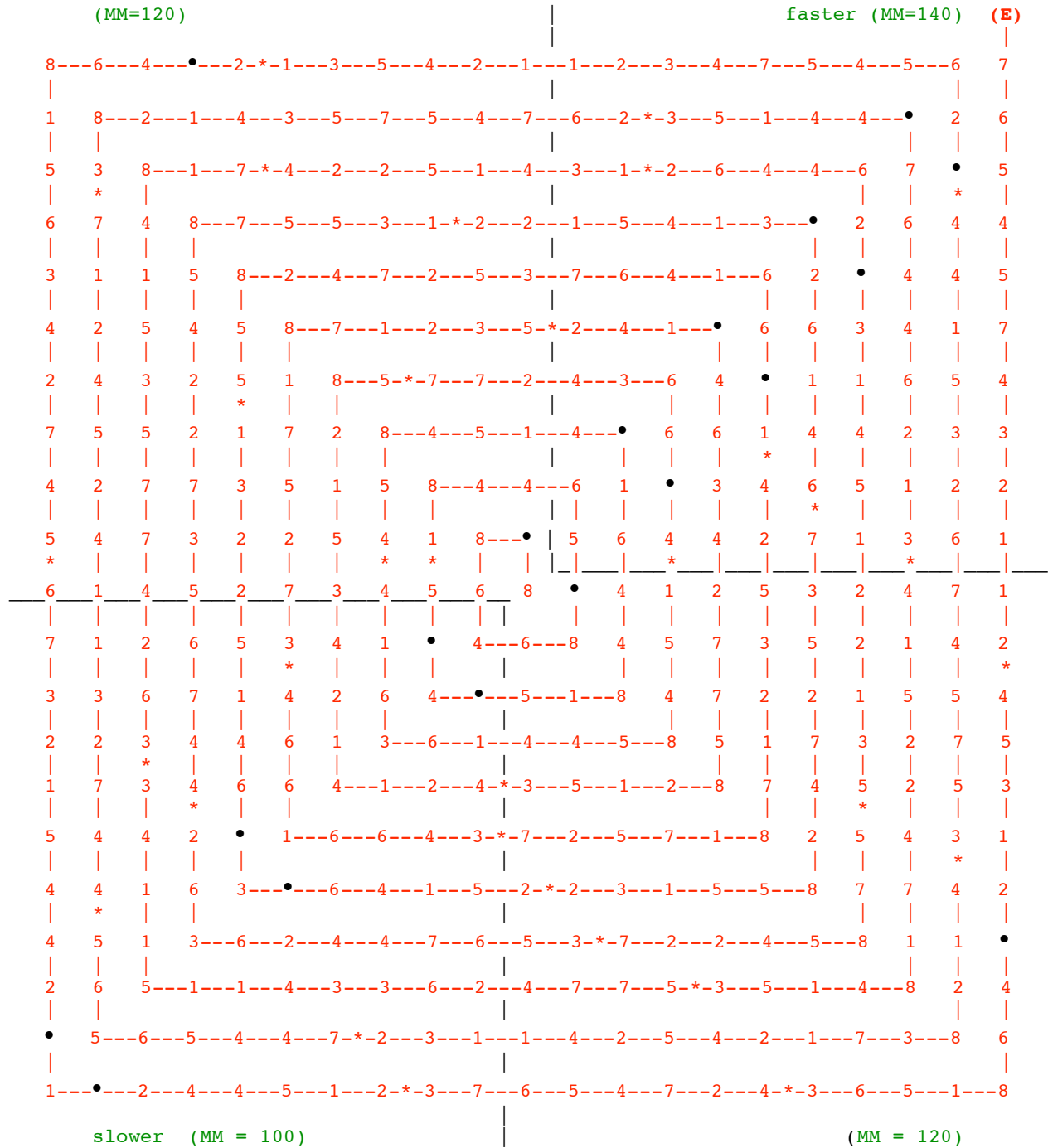
62³ 642 642 62³ 62³ 642 642 62³

Ex. 3 Array dispersion in the master array of MA.

section #agg array A array B array E transform
s

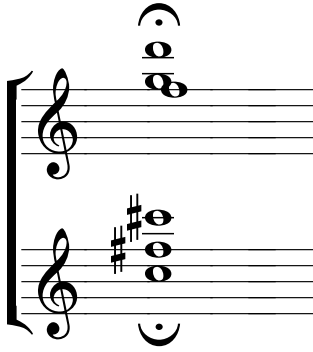
1	12		A6			T _B
2	16			B2		T ₂
3	13		A3			
4	8				E1	
5	13		A5			
6	16			B1		RT _A I
7	12		A2			
8	8				E1	RT ₁ I
9	13		A1			
10	16			B3		RT ₅ I
11	14		A4			T ₇
12	13		A1			T ₄
13	12		A2			T ₆
14	16			B3		RT ₂
15	12		A6			
16	8				E1	RT ₅ I
17	16			B1		
18	8				E1	T ₄
19	14		A4			
20	16			B2		T ₆ I
21	13		A5			T _A
22	13		A3			T ₂
23	13		A5			T ₈
24	14		A4			T ₅
25	8				E1	RT _B
26	16			B3		T ₉ I
27	13		A1			T ₈
28	16			B1		RT ₄
29	13		A3			T ₄
30	16			B2		T _A I
31	8				E1	T ₆ I
32	12		A6			T ₁
33	12		A2			

Ex. 4 MA Matrix.



(the symbol • indicates a *Ma.*)

Ex. 5 Chord of MA 8.



SCs 6-6[012567]

Ex. 6

MA is as selfless as I am.

Mother, at song no star, eh, Tom?

Mom.

Ex. 7 Some associations between rows in MA.

Ex. 7a :

P:	C C# F F#	E B G# G	A D A# D#
RT ₃ IP:	C F C# F#	G# G E B	A A# D D#

Ex. 7b :

	P:	C C# F F#	E B G# G	A D A# D#
RT ₆ IP:	D# G# E A	B A# G D	C C# F F#	
P:	C C# F F#	E B G# G	A D A# D#	
	RT ₀ IP:	A D A# D#	F E C# G#	F# G B C

Ex. 7c:

P:	C C# F F#	E B G# G A D A# D#
RP:	D# A# D A G G# B E	F# F C# C
P:	C C# F F#	E B G# G A D A# D#
T ₃ IP:	D# D A# A B E G G#	F# C# F C
P:	C C# F F#	E B G# G A D A# D#
T ₃ P:	D# E G# A G D B A#	C F C# F#
P:	C C# F F#	E B G# G A D A# D#
RT ₆ IP:	D# G# E A B A# G D	C C# F F#

Ex. 7d:

P:	C C# F F# E B	G# G A D A# D#
RT ₅ IP:	D G D# G# A# C	F# C# B C E F

Ex. 7e:

P:	C	C# F F# E B G#	G A D A# D#
T ₉ P:	A A# D D#	C# G# F E F# B	G C

Ex. 7f:

P:	C C# F F# E	B G# G A D A#	D#
T ₃ P:	D# E	G# A G D B A#	C F C# F#

Ex. 7g:

P:	C C# F	F# E B G# G A	D A# D#
T ₃ IP:	D# D A#	A B E G G# F#	C# F C
T ₆ P:	F# G B	C A# F D C# D#	G# E A
T ₉ IP:	A G# E	D# F A# C# D C	G B F#