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DYNAMIC AND ATTACK ASSOCIATIONS IN BOULEZ'S *LE MARTEAU SANS MAÎTRE*

WAYNE C. WENTZEL

I. BOURREAUX DE SOLITUDE

LE MARTEAU SANS MAÎTRE is a pivotal composition in the works of Pierre Boulez, coming after the integral serial *Structures for Two Pianos, Book I*, and before the aleatoric Third Piano Sonata. Is *Le Marteau* a transitional work, showing both serial and free composition? In reflecting back upon the years when he composed *Le Marteau*, Boulez recalled being torn between “thoughts of discipline” and the “subversion of a basic order.”¹ To what extent does *Le Marteau* show this dichotomy of discipline and subversion, and do various movements point more to one concept than the other? Until recently, most people believed that Boulez had relaxed his serial methods throughout *Le Marteau*, but in a recent study, Steven D.

Winick presented a convincing argument for the presence of a carefully controlled serialization of pitch and duration in the “bourreaux de solitude” movement.²

Several other authors have also attempted to deal with serialism in *Marteau*. Ulrich Siegele, in his book, *Zwei Kommentare zum “Marteau sans maître” von Pierre Boulez*, also came up with findings similar to Winick's.³ In his second commentary, “bourreaux de solitude, oder: Von der Technik,” Siegele associates the opening twelve pitches with the durational series similar to the one used in Messiaen's *Mode de valeurs et d'intensités* and Boulez's *Structures Ia*. His opening argument is somewhat obscured, however, by his attempt to order the first twelve pitches into a traditional row formation. This Schönbergian approach does not appear to reflect Boulez's actual organizational process.

Other authors who deal with the opening of the “bourreaux” movement are Gwyneth Margaret Roberts, in her Indiana University master's thesis, “Rhythm as a Structural Element in Boulez' *Marteau sans maître*,” Dominique Jameux in *Pierre Boulez*, and Peter F. Stacey, in *Boulez and the Modern Concept*.⁴ Roberts noticed the twelve durational values but did not associate them with exact pitches. Jameux noticed both the twelve durations and the twelve pitches but confines her discussion and example to the first measure. That is, she does not point out the significance of this opening series as a potential for the entire movement. Neither of these two authors discusses the dynamic-attack indications (in fact, Jameux even omits them from her example). Stacey's presentation is much like Siegele's in that pitch, duration, dynamics, and attacks are dealt with only for the opening section. On the other hand, Winick, by emphasizing what he calls pitch-duration associations (PDAs) shows a more logical presentation for those two elements throughout the movement. It remains now to bring dynamics and attacks into this system.

Let us begin with a brief summary of Winick's system. If the smallest note value, the sixteenth note, is associated with the pitch D, then the whole array of pitches and durations is referred to as PDA = D. This is the case in the first measure of “bourreaux de solitude” where D = , D# = , E = , et cetera, rising chromatically up to C# = . (see Example 1).

This process continues with PDA = G#, PDA = A#, and so on. Using this method, Winick accounts for the very concise opening instrumental introduction, and also the rather scattered presentations of PDAs throughout the rest of the movement.

While pitch and duration are important components of Boulez's integral serial style, we know that in *Structures for Two Pianos, Book I*, he serialized dynamics and attacks as well. Before him, Messiaen had associated a single dynamic and a single attack with a specific pitch and duration in *Mode de*

flute (sounds as written)

xylo

vibra

guit

viola

EXAMPLE 1

valeurs et d'intensités. While not strictly serial, this work had a great influence on Boulez's *Structures*. In *Structures Ia*, he limited one dynamic and one attack to *each row* rather than each note. Other forms of dynamic and attack serialization occur in *Structures Ic*.

Since Boulez was still interested in pitch and duration associations in *Marteau*, might he also be concerned with some sort of dynamic and attack associations as well? By observing the associations at the beginning of the movement in the light of Winick's PDAs, it is possible to prove that Boulez indeed had a whole system of dynamic-attack associations, which are serially coordinated with pitch and duration. Again, Siegle presents some initial ideas along this line, which may now be seen in a new light. The main purpose of this paper is to take the findings, mainly of Siegle and Winick, and to integrate them, along with other ideas, into a single unified system.

In the first PDA, where $D = \text{♪}$, the dynamics are presented in pairs, in the order: *mf*, *mp*, *p*, *pp*, *ff*, *f*. The first dynamic of each pair has a particular attack associated with it: $>$ $>$ $-$ $-$ *sfz* *sfz*. The second dynamic of each pair has no attack indication. This is presumably a "normal" articulation, a designation used both by Messiaen (in *Mode*) and Boulez (in

Structures 1a and *1c*). Example 2 illustrates PDA = D with the associated dynamics and attacks.

D	$\overset{>}{mf}$	1	
D#	mf	2	
E	$\overset{>}{mp}$	3	
F	mp	4	
F#	$\bar{p}$	5	
G	p	6	
G#	$\bar{pp}$	7	
A	pp	8	
A#	$\overset{sfz}{\wedge} ff$	9	
B	ff	10	
C	$\overset{sfz}{\wedge} f$	11	
C#	f	12	

EXAMPLE 2

Because it is fixed, the pattern of dynamics-attacks may be expressed individually by the numbers 1–12. However, inasmuch as the two items of each pair are never separated, (in this movement) the numbering may be simplified as 1–6, as indicated in the final column of Example 2. It is not immediately apparent from this first list, what the logic is to Boulez's order of dynamics and attacks. It will become clear once the full chart is presented.⁵

The second set PDA = G# contains exactly the same order: 1–6.

	G#	$\overset{>}{mf}$	1		etc.
	A	mf	2		

The other sets which constitute the “introduction” to “bourreaux” are in the following order:

PDA = A#	3 4 5 6 1 2
PDA = C#	6 1 2 3 4 5
PDA = A	2 3 4 5 6 1
PDA = E	3 4 5 6 1 2

It can easily be seen that in each case the sequence is maintained but the starting number may be different. Yet why does Boulez choose the order that he does? What determines his starting number (and of course the dynamic and attack associated with it)? And why are A# and E the same? It is the transposition of the PDA which provides the solution. If D = 1, then D# = 2, E = 3, et cetera. Since the 1–6 series is completed at G, the numbers are then repeated up a tritone. Therefore:

D	and G#	= 1
D#	and A	= 2
E	and A#	= 3
F	and B	= 4
F#	and C	= 5
G	and C#	= 6

The starting pitch of the first six PDAs and their associated numbers are:

D	G#	A#	C#	A	E
1	1	3	6	2	3

These are, indeed, the starting numbers of each dynamic-attack series. With this information as a starting point, the entire series of PDAs with dynamics and attacks may now be presented in the matrix shown in Example 3.

We may now see the logic to the *order* of Boulez's series of dynamics and attacks. It seems that Boulez probably started with PDA = C. In this column the dynamic levels decrease (by pairs) systematically from *ff* down to *pp*, and the attacks decrease (on the first of each pair) from *sfz* to *>* to *-*.⁶

In both PDA = C# (measures 6–8) and PDA = E (measures 10–14), Winick suggests that the durations are “disguised”;⁷ that is, they are converted into triplet form. The reader (or listener) may at first be reluctant to accept these variations as part of the “regular” durational ordering. Yet

Example 3 displays a musical score for Boulez's *Le Marteau sans maître*. The score is organized into 12 staves, each featuring a melodic line and a corresponding sequence of dynamic markings and fingerings. The dynamics include *mf*, *ff*, *p*, *pp*, and *mp*, often with accents or breath marks. Fingerings are indicated by numbers 1-6 in boxes. The key signature has one sharp (F#) and the time signature is 3/4.

EXAMPLE 3

the dynamic-attack association is absolutely clear; it conforms completely with Winick's theory.

Since the voice sings all twelve pitches from measure 13 through measure 24, it is tempting to continue the PDA and dynamic-attack associations into that territory. With a few exceptions, the associations do continue. Since Winick has pointed out exceptions in other areas, the exceptions here need not surprise us. The voice sings PDA = B (see Example 4).

The musical score for Example 4 consists of three staves. The first staff begins with a treble clef and a 5/16 time signature. It contains measures 12, 11, 4, 6, 10, and 7. Dynamics include *p*, *pp*, *ff*, *f*, *mp*, and *mf*. The second staff starts with a treble clef and a 3/16 time signature, followed by measures 3, 5, 16, 2, and 9. Dynamics include *ff sfz* and *mp*. The third staff begins with a treble clef and a 5/8 time signature, followed by measures 8, 1, 5, and 2. Dynamics include *mf*, *pp*, *f sfz*, and *pp*. Various musical notations such as slurs, accents, and fermatas are present throughout the score.

EXAMPLE 4

The durational exceptions occur with the pitches F, G#, and A.⁸ We note that in PDA = B, 4 is the starting point on the dynamic-attack matrix. The order in fact is 4 5 6 1 2 3. There is only one exception in the dynamic-attack series: pair 3 should be *p p* but is instead: *pp p*.

After the opening instrumental introduction, as Winick mentions, the distribution of pitch and duration becomes very complex. This is also true for the dynamics and attacks. Winick gives us charts of all twelve PDAs as they occur throughout the movement. These pitches are still associated with their specific durations. They may also now be associated, for the most part, with their respective dynamics and attacks. Over 80% of the pitches in this movement conform to the guidelines given in our matrix, agreeing in pitch, duration, dynamic, and attack. We may use as a case in point PDA = D, the one which begins the movement. It is presented very clearly in this first appearance. Throughout the rest of the movement, where various notes are presented at many different times, the associations continue, but less consistently: twenty-two more notes have the "correct" dynamic and attack (thirty-four all together), while twelve do not. (This is one of the lower percentages.) A similar situation occurs for all the PDAs. If a PDA is presented in the opening introduction, it is usually exact, and

when it appears later it may have exceptions. The PDAs that do not occur in the introduction (six do not) have exceptions throughout. The chart in Example 5 shows each PDA, the total number of pitches in Winick's examples, the number of pitches whose dynamic-attack association conforms to the previous matrix, the percentage that fit, and the number of pitches that do not fit. The percentage of pitches that fit ranges from 71% in PDA = G to 91% in PDA = A# (see Example 5).

PDA	TOTAL PITCHES	NUMBER THAT FIT	PERCENT	DO NOT FIT
C	44	38	86%	6
C#	42	36	85%	6
D	46	34	73%	12
D#	54	42	77%	12
E	53	42	80%	11
F	47	39	82%	8
F#	58	45	77%	12
G	46	33	71%	13
G#	46	36	78%	10
A	47	40	85%	7
A#	37	34	91%	3
B	46	36	78%	10

EXAMPLE 5: CHART OF EXCEPTIONS

While the overall total (80%) certainly proves that Winick's PDA system and the newer dynamic-attack matrix are compatible, it is still difficult to reconcile the high number of exceptions. Can we account for any of these exceptions and can we explain their presence in the context of the movement? To do this requires us to determine whether an exception is a deliberate change or simply some sort of error.

Several discrepancies may be detected if we compare the three published versions of *Marteau*. The first edition from 1954 (Universal, UE 12362) is a reproduction of Boulez's own manuscript. The second, from 1957, is a printed score called "final version" (UE 12450–12652). Still a third score is Philharmonia 398, which at first might appear to be simply a reprint of UE 12450–12652 but is actually a newly engraved score. We can trace the origins of several of these discrepancies by the comparison in Example 6.⁹

m.	note	manuscript	UE 12450	Phil 398
38	A#
38	C	<i>mp</i>	<i>mp</i>	<i>p</i>
40	G	<i>f</i>	<i>f</i>	<i>ff</i>
44	D#	<i>mp</i>	<i>mp</i>	<i>p</i>
57	G	<i>f</i>	<i>f</i>	<i>ff</i>
85	G

EXAMPLE 6

The notes (either duration or dynamic) are correct in the manuscript. That is, they are correct in the sense that they conform to their expected dynamics and attacks. The two durational errors then occur in the next copy and are carried over into the third copy, while the dynamic errors occur only in the third copy. It is still difficult to know whether these are simply printing errors or whether they are a result of Boulez's re-evaluation.

The other exceptions appear in all three scores and could be (a) mistakes that Boulez has made from a rough draft to copy UE 12362; (b) carelessness in his proceeding from chart to rough draft; or (c) deliberate changes that he decided upon for purely aesthetic considerations. If deliberate changes are actually part of Boulez's compositional decisions, then it illustrates a possible new freedom he was seeking within an otherwise strict integral serialization. Errors and other forms of carelessness may never be explained, but deliberate changes might be accounted for in a number of ways. In the following section we will attempt to show some possible changes in the original PDA concept and what Boulez did to bring these about.

Some of the exceptions occur in the last few measures of the movement where Boulez introduces, for the first time, the dynamic level of *ppp*, which was not a part of his original serialization. It must be a deliberate change on Boulez's part to prepare for the final cadential chord. In the original 1954 version of *Marteau*, this song was the final movement of the cycle. Therefore Boulez wanted a suitable ending not only for the movement but for the entire work. In all but one case the *ppp* dynamic is applied to the first note (i.e.) of 9 PDAs: D, D# (twice), E, F, G, G#, A (twice), A#, and B. These all appear in measures 92 and 93. Of the PDAs not used, two do not extend as far as these measures (the last note of PDA = C# is in measure 91

and the last note of PDA = F is in measure 84). The last note of PDA = C, however, retains its original value of *ff* because it occurs in the last measure of the movement (94) when the *ppps* have disappeared and all original dynamic values return for the final punctuating chord (see Example 7).

m. 91 through 2nd 16th of m. 92	m. 92 through 1st 16th of m. 93	middle of m. 93	end of m. 93	m. 94
regular values culminating in a punctuating chord	<i>ppp</i> in xylo	interruption: regular values	<i>ppp</i> in xylo and viola (pizz)	regular values as last chord

EXAMPLE 7

To this point we have presumed that when pitch and duration agree, it is the dynamic-attack which is the exception; but what if it were the other way around? If the pitch and dynamic-attack agree could it be the duration which is the exception? When we return to the ending and look at the notes surrounding the *ppps*, we notice that the pitches and the dynamic-attack values agree with PDA = C throughout. The durations also conform, with the exception of the final chord. Here the pitches, dynamics, and attacks all fit into PDA = C; yet all but one of the durations do not fit. Is it then possible that Boulez “adjusted” these durations to make a more consistent final chord (see Example 8)?¹⁰ (Since these durations are not “correct,” these notes are not found in Winick’s PDA = C but are at the ends of several other PDAs.)

Since this passage presents us with the possibility of altered durations, let us now examine several other passages where the original durational values may have been changed. Passages with triplets may show such changes. After Winick established a clear PDA = C# in measures 6–8, despite the triplet adjustments, he then generalized that later triplet adjustments could be counted at face value, as if the triplet signs were not present.¹¹ If this were true, then very few of the dynamic-attack values in the triplet passages would be correct. But what if these durations were not intended to be counted at face value; what if Boulez had a plan to adjust the durations when triplets were being used? Winick tried to come up with a plan for the triplets in measures 6–8 but nothing was consistent. However, a plan does seem to emerge in the later passages, a plan which may be generalized as follows:

- (1) the smallest durations (1 and 2) require no adjustments;
- (2) each larger duration should have one sixteenth note *subtracted* from its face value. This process throws each note (3–12) into the next higher PDA, giving it the correct dynamic-attack value.

"bourreaux," m. 94.

flute (sounds as written)

xylo *ff* 1 in C

vibra *mf* 5 in C shortened to 3

guit *mp* 8 in C shortened to 5

viola *mp* 7 in C shortened to 4

EXAMPLE 8: "BOURREAUX," M. 94

Examples 9 and 10 show the results of this process.

In Example 9 the C# and A may now be considered as notes 11 and 7 of PDA = D#. PDA = D# is the source of most of the other notes in this passage. The same process accounts for notes in Example 10.

The shortest notes (xylorimba, measure 41) are C ♪ = 2 in PDA = B; and F# ♪ = 1 in PDA = F#; these notes need no adjustment. Most of the remaining notes subtract one sixteenth from their face values. There are two exceptions. The longest note is the F# harmonic for the viola in measures 41–43, where the face value is actually 14! Reducing this value by two sixteenth notes to 12 produces the correct dynamic and attack. The other exception is harder to explain. The guitar A in measure 40 is 5 in PDA = F and already has the correct dynamic-attack. Why? (Is it because the second of the three tied notes is not under a triplet sign?)

These two passages account for many notes that seemed like arbitrary exceptions earlier. If we add these ten notes to the six printing errors, the eleven *ppps* and the four adjustments to the final chord, we have accounted

"bourreaux," mm. 18–19

$C\sharp = 12 \text{ in } D, -1 = 11 \text{ in } D\sharp$

$A = 8 \text{ in } D, -1 = 7 \text{ in } D\sharp$

EXAMPLE 9: "BOURREAUX," MM. 18–19

"bourreaux," mm. 40–43

flute (sounds as written)

xylo

vibra

guit

viola

(harmonic)

EXAMPLE 10: "BOURREAUX," MM. 40–43

for thirty-one of the exceptions. These adjusted durations may now require changes in the make-up of several of Winick's PDA charts.

Other exceptions may be reconciled with the chart by means of durational changes “in context,” that is, in relation to the immediately surrounding notes. In the first place, Winick accepted the triplet adjustments in measures 5–7 because the surrounding notes suggested that they all belonged to PDA = C#. I have proposed that we include several notes of the vocal line between measures 13 and 24 as belonging to PDA = B, because all the other notes belong to it. Can we now stretch this idea to include other passages as well?

One possible passage occurs in measures 25–31 (Example 11). The flute’s melody consists of notes from PDA = F, except for the B $\flat$ in measure 30. Could this be duration 6 reduced to 4? The dynamic-attack and the context suggest it. Several other notes could be accounted for in this manner. The two other PDAs which are predominant in this section are PDA = C and PDA = G. All the exceptions can be reconciled as having correct pitch with dynamic-attack and adjusted durations (Example 12).

"bourreaux," mm. 25–31

EXAMPLE 11: "BOURREAUX," MM. 13–24

m. 25: viola, E $\flat$	$\bar{p}$	3 = 11 in F
m. 26: vib, E	<i>pp</i>	3 = 10 in G
m. 26: xylo, G	<i>mp</i>	9 = 8 in C
m. 27: guitar, F	<i>sf</i> <i>ff</i>	9 = 11 in G
m. 30: viola, D	<i>p</i>	4 = 8 in G
m. 31: guit, B $\flat$	$\bar{pp}$	5 = 11 in C
m. 32: viola, D	<i>p</i>	5 = 8 in G

EXAMPLE 12

If we accept these adjustments, then this passage results in only three interlocking PDAs: F, C, and G. In the larger context this is more than the preceding passages and less than the following. That is, the movement is gradually mixing together the PDAs as it progresses (Example 13).

measures: 1–13	13–18	18–24	25–32
PDAs: D G# A# C# A E;	Voix B, + D# acc;	Voix B, + F# acc;	Flute F + C + G acc.

EXAMPLE 13

In the first 32 measures of the movement, the PDAs are first used one at a time, then two at a time (one for the voice, one for the accompaniment), and then three at a time. Notice that in this process, *all 12 PDAs* are used once. From measure 32 on through most of the rest of the movement many PDAs are mixed together, with as many as eight at the same time.

In the complex PDA section (*circa* measures 33–91) it is even harder to account for the exceptions. Some may be dynamic-attack exceptions, others may be durational. Some notes have a correct relationship of pitch, duration, and dynamics but the attack is incorrect. In two instances, all but the dynamic are correct. This is very unusual because in the rest of the movement dynamics and attacks are never separated from each other. Example 14 is a list of these few exceptions.

Because so many PDAs are in use through this part of the piece, durational exceptions “by context” are much more difficult to isolate and justify. Certain passages, however, may suggest such exceptions. Example 15 is provided as a list of possible durational exceptions, some of which are more logical and convincing than others. Each item shows several notes of a PDA occurring together. The exceptions are shown with the “correct” value in brackets and the actual value beneath it.

Although no single new pattern emerges from this, some generalizations may be drawn. With two exceptions (PDA = G#, measure 55, guitar; and PDA = A#, measure 45, voice), the durational changes are reductions in value. Two reductions may be justified as coinciding with pizzicato marks in the viola: PDA = C#, measure 79 and PDA = E, measure 82. The two most convincing passages are PDA = E at measures 79–84, and PDA = A# at measures 85–90. If these durational exceptions are accepted, then both PDAs contain all twelve notes. It would be logical for Boulez to begin simplifying the structure prior to measure 91 where PDA = C is the only set

present. We noted earlier that the simplicity of the opening gradually gives way to more complexity through measure 33. It builds up to measure 78 where a fermata and a change of tempo allows the process to reverse: measures 79–84 have eight PDAs with PDA = E predominating; measures 85–90 have seven PDAs with PDA = A# predominating. There is then a slight overlap into measure 91–94 where only PDA = C is used (see Example 16).

PDA	measure	instrument	note	should be
F#	50	viola	D = <i>p</i>	<i>p̄</i>
	77	vib	D# = <i>p̄</i>	<i>p</i>
G	49	flute	D# = <i>pp</i>	<i>pp̄</i>
	49	guitar	D# = <i>pp</i>	<i>pp̄</i>
	55	guitar	B = <i>mp</i>	<i>mp̄</i>
G#	56	guitar	F# = <i>sfz</i> <i>ff</i>	<i>sfz</i> <i>ff</i>
	64	guitar	A = <i>mf̄</i>	<i>mf</i>
A	27	guitar	F = <i>sfz</i> <i>ff</i>	<i>sfz</i> <i>ff</i>
	38	xylo	A# = <i>mp̄</i>	<i>mp</i>
B	26	xylo	G = <i>mp</i>	<i>mp̄</i>
	64	viola	F = <i>mf̄</i>	<i>mf̄</i>

EXAMPLE 14

PDA = E

m. 47			76	77			
voice	voice	voice	vib	flute	vla	vla	vla
[10]	[9]	7	1	8	[10]	[9]	7
1	2				1	2	

m. 79		80	81	82		83		84
vib	guit	guit	flute	vib	xyl	guit	vla	vib
7	9	10	[11]	[8]	3	6	[4]	5
			8	6			1	2
								1
								11

(all 12)

m. 85	87		88
guit	guit	guit	guit
8	7	[9]	[10]
		2	1

PDA = C#

m. 45				m. 75, 76				
xyl	guit	voice	voice	flute	vib	vla	guit	vla
2	6	2	[6]	1	8	[6]	7	2
			4			4		

m. 77			m. 79	81	84	87		88
guit			guit	vla	xyl	vib	xyl	vib
[11]	3	[4]	[12]	6	[2]	1	8	2
4	1	8	1					4
								5
								9
								10

PDA = D

m. 75						76	77
flute	xyl	guit	vib	vib	vib	vla	guit
8	[10]	3	5	4	[6]	[12]	[9]
	2				3	2	2
							1

PDA = F

m. 76	77		78		
xyl	vib	xyl	vib	flute	vla
[6]	1	[3]	[11]	8	[12]
2		9	10		5

PDA = F#

m. 76				m. 80		81	82	84		85	
flute	flute	vib	vib	guit	xyl	vla	xyl	flute	guit	xyl	xyl
2	[5]	6	7	4	2	5	1	12	9	[2]	[5]
	3									1*	3

*this is a correct 2 in the MS

PDA = G

m. 63	64	65	70			72	73	74
xyl	guit	guit	flute	vib	vib	guit	vib	vla
1	[5]	[3]	10	8	[12]	8	12	7
	3	2			8			6
								2

PDA = G#

m. 52		53		55	56	57	61
vib	vib	xyl	vib	guit	xyl	guit	vib
4	6	3	4	[4]	1	12	10
				5			7

PDA = A

m. 46	47				48	49
vla	vib	flute	guit	guit	voix	vla
8	3	5	7	4	[1]	6
					2	

EXAMPLE 15 (CONT.)

PDA = A#

m. 53	54	55	56	67			
viola	voice	voice	voice	voice	voice	voice	voice
1	[2]	[3]	6	[5]	2	[4]	[7]
	1	2		1		3	1

m. 85		86		87		88		89		90		
guit	flute	flute	flute	vla	vla	vla	vla	xyl	guit	xyl	xyl	
6	5	4	[7]	8	10	[12]	9	1	11	[3]	2	
			3			2				1		

(all 12)

PDA = B

m. 61	62		63		64	65	66		68	69	70
guit	flute	xyl	flute	flute	vla	vla	vla	vla	flute	vla	xyl
6	9	7	5	[8]	7	[12]	3	[7]	6	7	[9]
				3		5		3			2

m. 71		73		74		
guit	guit	guit	flute	guit	xylo	xylo
3	[7]	4	4	7	1	2
	3					

EXAMPLE 15 (CONT.)

1	13	18	25	33	75	79	91	94
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PDAs

D	G#	A#	C#	A	E	B + D#	B + F#	F + C + G	many	all	fewer	C
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EXAMPLE 16

Finally, Winick shows that the distribution of PDAs throughout the movement often creates symmetrical relationships. In most cases the dynamic-attack associations coincide with these relationships. The above cited exceptions (*ppps*, final chord, triplets, and other changes) frequently do not. Of the eleven *ppps* only two occur in Winick's symmetries (F and B in measure 93, xylorimba). I have suggested that the notes in the final chord and many notes in the triplet passages actually belong in other PDAs. None of the four notes "adjusted" in the final chord occur in the symmetries. Of the thirteen notes used in the triplet passages at measures 18 and 40, four are included in the symmetries, but one of these (C in measure 41, xylorimba) needed no adjustment and so still belongs in Winick's PDA = B. The other note (F# in measure 41, viola) is the 14 which Winick already includes as a 12 in his PDA = G. Of the remaining exceptions, more than half do not coincide with symmetries. The best example is PDA = C where five of the six exceptions occur in the middle of the movement between measures 46–48. This is the only place in this PDA where symmetrical relationships do not occur (see Winick's Example 2).

While these explanations may justify many of the exceptions, others still remain ambiguous. Yet most of the notes in this movement agree in all aspects of pitch, duration, dynamic, and attack. Steven Winick has proved conclusively that pitch and duration associations exist throughout "bourreaux de solitude." The dynamics and attacks may now be brought into this area as well.

II. THE COMMENTAIRES

The serial principles Boulez employs in the "Commentaires" on "bourreaux de solitude" are also related to those in the song but do not extend as far. They are still serial, but with smaller amounts of material to be serialized. Instead of equating each pitch with one duration, one dynamic, and one attack, (the way he did in the song), Boulez limits the number of durations, dynamics, and attacks.

For example at the beginning of "Commentaire I" he uses only the four shortest durations ( ) and the softest dynamic-attack pairs *pp pp* and *p̄ p* (see Example 17).¹² In measures 4–5, there are only three durations and three dynamic-attack levels. Boulez has eliminated the and the *p̄* leaving pair 4 but only the first part of pair 3. Boulez never splits up the dynamic-attack pairs in the song itself (see Example 18).

There is a further decrease in serial material at measure 6 where only one duration ( ) and one dynamic and attack remain (*pp*). Ordinarily this kind of passage would not be considered serial, but it is in this context, as a part of a systematic change of process. At measure 7 Boulez reverses the process

"Commentaire I"
mm. 1–3

1.		A	$\bar{p}\bar{p}$	
2.		A#	pp	
3.		B	$\bar{p}$	
4.		C	p	

5.		C#	$\bar{p}\bar{p}$	
6.		D	pp	
7.		D#	$\bar{p}$	
8.		E	p	

9.		F	$\bar{p}\bar{p}$	
10.		F#	pp	
11.		G	$\bar{p}$	
12.		G#	p	

EXAMPLE 17:

"COMMENTAIRE I," MM. 1–3

mm. 4–5

1.		A	p	
2.		A#	$\bar{p}\bar{p}$	
3.		B	pp	

4.		C	p	
5.		C#	$\bar{p}\bar{p}$	
6.		D	pp	

7.		D#	p	
8.		E	$\bar{p}\bar{p}$	
9.		F	pp	

10.		F#	p	
11.		G	$\bar{p}\bar{p}$	
12.		G#	pp	

EXAMPLE 18: MM. 4–5

and begins to expand the serial material. He first adds ♩ and $\bar{p}\bar{p}$, and in the last part of measure 8 he not only reinstates pair 3 ($\bar{p} p$) but also adds pair 2 ($\text{♩} p$). On the other hand, durations become more obscure. While the short values predominate, an occasional duration of 4, 5, or 6 appears. It seems odd that while Boulez keeps the pitch-dynamic-attack relationships so constant, he tampers with the previously stable durations. (Is this free handling or another consistent process?) Some of the shorter durations may be explained by the viola's pizzicato, and the xylorimba's quick decay. Yet even the flute sometimes has unexplained shorter-than-usual values.

The flute part separates from the xylorimba and viola at measure 12. While the flute retains the same dynamic-attack pairs as before, the other two parts drop pair 4 ($\bar{p}\bar{p}$) and add pair 1 ($\text{♩} p$). Again the durations are

not consistent. The rest of the section (up to measure 53) seems to stabilize with this basic content.

While all this may still be considered serial and somewhat related to, and perhaps derived from “bourreaux de solitude,” it is not quite the same serial process. Perhaps this is one of the implications of the title: “Commentaire.”

Since it is not included in the earliest 1954 score, “Commentaire III” may be presumed to be the last of this group of movements to be composed. It contains several fragments of the PDAs from the song. In the part of the movement between measures 71–105, several reasonably clear PDAs occur; clear in the sense of pitch and duration, but this time the dynamics and attacks appear in groups of three (Example 19).

“Commentaire III”

	mm. 71–73	mm. 74–76	mm. 93–95
1.	F ($\bar{p}$)	A# $\bar{pp}$	C $\bar{p}$
2.	F# pp	B pp	C# $\bar{mp}$
3.	G p	C p	D mp
4.	G# $\bar{pp}$	C# $\bar{pp}$	D# $\bar{p}$
5.	A pp	D pp	E $\bar{mp}$
6.	(A#) p	D# p	F mp
7.	B $\bar{pp}$	E $\bar{pp}$	F# $\bar{p}$
8.	C pp	(F) pp	G $\bar{mp}$
9.	C# p	F# p	(G#) mp
10.	D $\bar{pp}$	G $\bar{pp}$	A $\bar{p}$
11.	D# pp	G# pp	A $\bar{mp}$
12.	E p	(A) p	B mp

EXAMPLE 19: “COMMENTAIRE III”

Notice that in measures 71–73 (PDA = F) and 74–76 (PDA = A#) the order of dynamic-attacks is $\overline{pp} \overline{pp} p$, and that in measures 93–95 (PDA = C) the order is $\overline{p} \overline{mf} \overline{mp}$. This limitation of dynamics and attacks reminds us of *Commentaire I*. (In Example 19, letters in parentheses indicate pitches whose durations are exceptions. There are far fewer than in “*Commentaire I*”. Dynamics in parentheses are exceptions to the pattern.) Boulez presents the $\overline{pp} \overline{pp} p$ series again a few measures later, but less consistently. In measures 102–103 he uses the series: $\overline{mf} \overline{mf} f$ with consistent pitch order but with less consistent durations. “*Commentaire II*” uses the same kind of note values, durations, dynamics, and attacks as these movements, but systematic presentations of even fragmentary PDAs are hard to determine.

III. OTHER MOVEMENTS

While the “bourreaux” movements all show some evidence of serialization, it is apparent that the other movements go beyond this process into a new world of sound that Boulez was to explore in greater depth in the Third Piano Sonata and *Structures, Book II*. “*L’artisanat furieux*” and its companion pieces “avant” and “après” all contain these new elements: irregular groupings (seven sixteenth notes, five eighth notes, and so on), strings of similar durational values (several eighth notes in a row), and frequent grace notes.¹³ All of these are typical of improvisation and are common to “fantasia” movements in earlier, traditional music. In addition, the attacks and dynamics usually apply to a series of notes rather than individual ones. The first version of “bel edifice” is also in this style. What is this style, and is it really new? In some respects these figurations not only foreshadow the sounds of Boulez’s later music, but also recall his earlier works such as the First Piano Sonata and the Flute Sonatine. That is, Boulez may once again be manipulating *rhythms* rather than *durations*.¹⁴

Is Boulez moving away from integral serialism and writing in a freer style more in keeping with his new interest in aleatoric concepts? Or is he experimenting with a new type of serialism, quite different from the previous type; a type of serialism which actually sounds improvisatory?¹⁵ One thing is clear: he is obviously not setting up a standard twelve-tone series where each pitch has one duration, one dynamic, and one attack associated with it. Whatever the methodology may be, there is no doubt that these movements are indeed different from the “bourreaux” movements in both approach and sound. These may be the portions of the work Boulez meant when he referred to having “... oriented myself toward more unpredictable gestures, my technique becoming more flexible and making room for freedom.”¹⁶

In this light the final song, “bel edifice et les pressentiments: double,” is particularly significant. (Neither version of “bel edifice” is in the 1954

version, suggesting the possibility that they were the last to be composed.) In the song, but mostly in its postlude, segments of the older, strict serial style are alternated with segments in the other “fantasia” style. Example 20 shows the overall structure. In the PDAs both pitch-duration associations and the additional dynamic-attack associations are clearly presented. They are used, in fact, exactly like the introduction to “bourreaux de solitude.”

Diagram of “bel édifice et les pressentiments: double”

Song:

Tempo libre de récit mm. 1–8 vocal fantasia style	Assez lent mm. 3–14 instrumental PDA = D, D#, F#	Tempo récit mm. 15–43 vocal fantasia style
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Postlude:

Assez lent mm. 42–45 instrumental PDA = G#, G	presser—Vif—Plus Vif mm. 46–58 instrumental fantasia style	Assez lent mm. 59–67 instr. with voice PDA = E, B, D# F
presser Vif mm. 67–68 with voice fantasia style	Assez lent mm. 79–81 with voice PDA = A	presser—Vif mm. 81–102 with voice fantasia style
Rapide; Assez lent; mm. 103— with voice PDA = C#, D# A	Rapide; Plus rapide —117 B F, A	Assez Vif; modéré mm. 118–41 voice, flute, & perc. fantasia style
Très rapide mm. 142–49 with voice PDA = E, G#, D	Lent mm. 149–53 instrumental only C# D	Sans riguer mm. 154–58 flute & perc. fantasia style
Pas trop lent mm. 157–60 with voice PDA = G	Subitement Rapide 161–63 instrumental only A#	Modéré, sans riguer mm. 164–90 flute & perc. fantasia style

EXAMPLE 20:

“BEL ÉDIFICE ET LES PRESENTIMENTS: DOUBLE,” MM. 9–11

Note that in measures 9–11 (Example 21), the first PDA (PDA = D) is the same one that began “bourreaux de solitude.” In this instance the presentation is almost a retrograde of the first measure of “bourreaux.”¹⁷ (Compare this with Example 1.) The voice sings the two notes originally played by the flute. These measures, however, contain the only deliberate reference to a specific passage in “bourreaux”; the other passages present clear PDAs with a similar usage to “bourreaux” but the instruments play different notes often in different registers and at different times. That is, the methodology is the same, but the musical results are different.

The musical score for measures 9–11 of Boulez's *Le Marteau sans maître* is presented in five staves. The key signature is two sharps (F# and C#) and the time signature is 2/4. The staves are labeled: xylo (xylophone), vibra (vibraphone), guit (guitar), voice, and viola. The score includes various dynamics such as *mf* (mezzo-forte), *ff* (fortissimo), *pp* (pianissimo), *mp* (mezzo-piano), *p* (piano), and *sfz* (sforzando). Articulations like accents (>) and slurs are used throughout. Measure numbers 12, 10, 4, 6, 5, and 9 are indicated above or below the notes. The viola staff is in a lower register, indicated by a '15' at the beginning.

EXAMPLE 21

Several exceptions occur with the PDAs in this movement. In the instrumental interlude within the song (measures 4–14), PDA = D is reasonably strict, whereas PDA = D# is not.¹⁸ Throughout the movement, the main exceptions occur in the xylorimba. Boulez often shortens the durations, presumably to give a sharper staccato effect (the effect he used in “Commentaire I”). In several of these instances, the shortened xylorimba note *plus* the following rest equals the correct duration (Example 22). If we accept these durations, then all twelve notes with correct dynamics and

attacks appear in each passage (with the exception of the first passage at measures 12–13.)

mm. 12–13: PDA = F#

$$\begin{array}{cc} \text{G}\sharp \text{ } \text{♪} \text{ } \text{♩} & \text{A} \text{ } \text{♪} \text{ } \text{♩} \text{ } \text{♩} \\ 2 + 1 = 3 & 1 + 3 = 4 \end{array}$$

mm. 63–65: PDA = D#

$$\begin{array}{cc} \text{B}\flat \text{ } \text{♪} \text{ } \text{♩} \text{ } \text{♩} & \text{C} \text{ } \text{♪} \text{ } \text{♩} \text{ } \text{♩} \text{ } \text{♩} \\ 3 + 4 + 1 = 8 & 3 + 4 + 3 = 10 \end{array}$$

mm. 65–67: PDA = F

$$\begin{array}{cccc} \text{F}\sharp \text{ } \text{♪} & \text{B}\flat \text{ } \text{♪} \text{ } \text{♩} & \text{B} \text{ } \text{♪} \text{ } \text{♩} & \text{F} \text{ } \text{♪} \\ 2 & 3 + 3 = 6 & 3 + 4 = 7 & 1 \end{array}$$

m. 109: PDA = A#

$$\begin{array}{c} \text{G} \text{ } \text{♪} \text{ } \text{♩} \text{ } \text{♩} \\ 2 + 2 + 6 = 10 \end{array}$$

mm. 114–15: PDA = F

$$\begin{array}{c} \text{B}\flat \text{ } \text{♪} \text{ } \text{♩} \\ 3 + 3 = 6 \end{array}$$

mm. 149–51: PDA = C#

$$\begin{array}{cccc} \text{A} \text{ } \text{♪} \text{ } \text{♩} \text{ } \text{♩} & \text{G} \text{ } \text{♪} \text{ } \text{♩} & \text{B}\flat \text{ } \text{♪} \text{ } \text{♩} & \text{F}\sharp \text{ } \text{♪} \\ 4 + 4 + 1 = 9 & 3 + 4 = 7 & 4 + 6 = 10 & 1 \end{array}$$

EXAMPLE 22

“BEL ÉDIFICE ET LES PRESENTIMENTS: DOUBLE”

This process of “note-plus-rest” also occurred very systematically throughout *Structures Ia* and *Ic*, coinciding with Boulez’s desire for sharp attacks. In the rest of this movement, however, this process is not used consistently. In fact the use of rests in all the serial portions of *Marteau* appears to have no serial basis whatever. (This may yet be a further territory to explore.)

The viola, when it plays pizzicato, also has shorter than usual durations as in “bourreaux” and “Commentaire I” (see Example 23). Notice that in measures 61–62, the note-plus-rest situation is just like the xylorimba passages in Example 22. The passage at measures 107–108, however, contains shortened note values not only in the viola and xylorimba but also in the vibraphone part.

m. 61	A $\flat$		+	= 10
m. 62	D		+	= 4
<hr/>				
m. 107	D		should be	12
m. 107	F		should be	3
m. 108	C $\sharp$		should be	11
<hr/>				
m. 114	A $\flat$		should be	4

EXAMPLE 23

“BEL ÉDIFICE ET LES PRESENTIMENTS: DOUBLE”

One other exception occurs at measures 153–54, when the last few notes are “adjusted” to allow the instruments to end together (as in the end of “bourreaux”). Other exceptions are “correct” durations, dynamics and attacks but associated with “wrong” pitches in the Philharmonia edition. These pitches are correct in UE 12450–12652 and are either printing mistakes (most likely) or minor revisions as part of the “subversion” mentioned earlier.¹⁹

With these alternations of strict serial and fantasia-style writing, it is as if Boulez is trying to hold on to both worlds, or perhaps trying to reconcile them. But at last he lets go of integral serialism (measure 163) and allows the improvisatory sound of the solo flute to end the movement. Even

though integral serialization is not completely behind him (there are a few passages in the first part of *Structures II* that remind us of strict serialization),²⁰ it is this fantasia sound, giving the impression of freedom, which will dominate Boulez's later works.

NOTES

1. Interview by Pierre-Michel Menger in *Le Débat* no. 50 (August 1988) 257–66; English translation by Jonathan Bernard, *Perspectives of New Music* 28, no. 1 (Winter 1990):6–19.
2. "Symmetry and Pitch-Duration Associations in Boulez's *Le Marteau sans maître*," *Perspectives of New Music* 24, no. 2 (Spring-Summer 1986): 280–320. I would like to thank Mr. Winick for much help and encouragement in the preparation of the present article.
3. Hänslers-Verlag, Neuhausen-Stuttgart, 1979.
4. Gwyneth Margaret Roberts, "Rhythm as a Structural Element in Boulez's *Le Marteau sans maître*," (Master's Thesis, Indiana University, 1968); Dominique Jameux, *Pierre Boulez*, (Fagard Fondation, 1984); Peter F. Stacey, *Boulez and the Modern Concept* (Lincoln: University of Nebraska Press, 1987).
5. Stacey attempts to justify the order by saying that the dynamics gradually decrease as the pitches rise. However, this does not account for the *ffs* or *fs* of the last four notes.
6. It was tempting to adjust the numbering of the chart to coincide with this likelihood. However, since PDA = D is the first series in the movement, I have chosen this transposition as the beginning of the chart. Siegele also presents a chart (p. 63) with much of this information in a different and (in my opinion) a much less clear manner. For example, he reduces all attack markings to an apostrophe, thereby obscuring the variety within the attack serialization.
7. Winick, 282.
8. This can be seen at the beginning of Winick's Example 13, p. 301. Since the durations for the notes, F, G#, and A do not fit into

PDA = B, he quite naturally does not include them here. (Siegele makes an elaborate, if unconvincing, effort to justify these exceptional durations by adding the value *following* them.) Since the dynamics and attacks do fit I believe that these notes should be included.

9. In the manuscript score all note values are half the value of the two later scores (e.g. a in the two later versions is a in the first version). This matches the durations he worked with in *Structures Ia* and *Ic*. For the sake of comparison I have doubled the note values from the first version.
10. A similar situation occurs in the final movement, measures 153–154. Such adjustments have a precedent in Messiaen's *Turangalila Symphony*.
11. Winick, 283–84.
12. See also Siegele's explanation, pp. 72–76.
13. These three movements, in the expected order of “avant,” the song itself, and “après,” are the first three movements of the original 1954 edition.
14. Paul Griffiths in *Modern Music* (New York: George Braziller, Inc., 1981), 59, points out that *Structures Ib* had already reverted to the “flexibility of motion that he had achieved in the late 1940's,” comparing it to the slow movement of the Second Piano Sonata.
15. In his essay: “Eventuellment,” Boulez refers to “irrational transformations” where triplets, quintuplets, and so forth replace the original values. But is this a serial process?
16. *Le Débat*, no. 50, 261; *Perspectives of New Music* 28, no. 1:11.
17. This was pointed out by Theo Hirsbrunner in his book *Pierre Boulez und sein Werk* (Laaber-Verlag, 1985) 96. Boulez himself said that this song “mingles elements drawn from all three cycles” and that it provides a “meeting point which at the same time winds up the whole.” (Notes, p. vi from the 1957 edition.)
18. Roberts and Siegele noticed that duration 7 (for PDA = D) was omitted; but since the dynamic-attack association for G# is correct (*pp*), we may assume that Boulez has deliberately shortened the value. Set 2 (PDA = D#) has essentially proper pitch, duration, dynamic, and attack associations, but some notes are omitted and some repeated. Notice that as with “bourreaux,” notes under the triplet signs (A and C#) need to have one sixteenth note subtracted from face value. (A

few notes may be accounted for with PDA = F#: E in the guitar and the shortened G# and A in the xylorimba.)

19. Some definite mistakes in the Philharmonia edition are: measure 109, guitar B should be A#; measure 147, viola G should be E; measure 161, guitar Ab should be A. These are all correct in UE 12450. (This movement does not exist in the 1954 manuscript.)
20. See Manfred Stahnke, *Struktur und Ästhetik bei Boulez: Untersuchungen zum Formanten "Trope" der Dritten Klaviersonate*, (Hamburg: Karl Dieter Wagner, 1979).