Why This Material is Beneficial to You

The intent of this book is to provide composers with an extremely flexible and universal set of tools that can be applied to any musical situation. Traditional classical and jazz theories tend to overemphasize some aspects of music, and underemphasize others. Here you will find a well-rounded and comprehensive survey of all the most basic building blocks of music. This material is not intended in any way to be experimental or Avant-Garde. The materials are not genre specific. They fit equally well into whatever style they are thrust.

It is also the intent of this book to be as brief as possible. One should be able to peruse its entire contents in one sitting. This brevity was accomplished by focusing on short patterns rather than lengthy ones. These shorter patterns can in turn be combined to form longer patterns if one sees fit. Filling volumes and volumes with thousands of musical permutations would only make the book so daunting no one would ever use it. It is hoped that the conciseness of this book will serve as an invitation for musicians worldwide to make it an integral part of their musical studies.

There are three basic ways to use the material at hand. One can study it on a daily basis and attempt to memorize it. One can randomly pick a pattern from any page and then use that pattern for musical inspiration. Or, one can use it as a reference for looking up various patterns as needed. In any case, it will be invaluable to both experienced and beginning composers alike.

The traditional melody and harmony approach to music has been discarded here in favor of a more low level approach. There are seven basic parameters which are capable of describing any musical idiom. These parameters are: pitch, contour, rhythm, timbre, range, dynamics, and form. A single chapter has been devoted to each of these attributes.

It is hoped that this material is enlightening, time saving, and inspiring.

Table of Contents

I.	Pitch	4
II.	Contour	9
III.	Rhythm	15
IV.	Timbre	20
IV.	Range	24
V.	Dynamics	25
VI.	Form	26
VII.	Putting it All Together	28

Pitch

The goal of this chapter is to provide musicians with a comprehensive list of chords and scales that goes beyond anything offered in jazz or classical theory. By taking time to explore the combinations presented here, an almost unlimited palette of chord colors becomes available.

Although the term *chord* is generally used, we may from time to time refer to them as *scales* as well. In reality, they are just groups of notes and can be used in any way one sees fit.

Let's take a look at an example of one chord from the list.



Here are the rules that were used to generate this material.

- 1) C is always used as the bottom pitch.
- 2) Only one transposition or inversion of any particular chord is shown.
- 3) The most compact ordering of the notes is used.
- 4) Some chords, like 7th chords, are instead shown in stacked thirds order to be more recognizable. This is indicated by parenthesis.
- 5) Any chord containing two adjacent half steps was omitted. Ex: C, C#, D.
- 6) Each chord is sorted by number of notes and *complexity*, which gauges it's color.
- 7) Each chord followed by it's *retrograde* (reverse). The retrograde is made by arranging the intervals of the chord in reverse order.

While there are many books that try to overwhelm us with thousands of different chords or scales, in reality there are only 351 unique *kinds* of chords or scales. Of these, most are not particularly useful because they look like chromatic scales with a couple notes missing here and there. If we eliminate all the chromatic possibilities, there are only 131 that remain, and those are the ones we will focus on. If you are looking for a more chromatic sound, simple add additional notes to the chords already on the list.

You will notice that the chords on this list are given in standard notation, pitch class notation, and *interval notation*. Interval notation gives the number of semitones between one note and the next note in the chord. In a C Major triad, from C to E is 4 semitones, from E to G is 3 semitones, and from G to the octave is 5 semitones. Therefore C E G in interval notation is 4 3 5.

This is a *huge* advantage when inverting chords, or determining modes of a particular scale. All that is required is to move the first number to the end. C Major, which is 4 3 5 in root position, becomes 3 5 4 in first inversion. This works for modes as well. A melodic minor scale is 2 1 2 2 2 1 in interval notation. To generate the second mode, we move the first number to the end and get 1 2 2 2 1 2. This technique is very effective. Another major advantage of interval notation is that inversions of a chord are easily recognizable.

The column called *complexity* gives us insight into the actual sound of each chord. It uses an algorithmic technique to determine how related or unrelated the notes in a chord are to each other. Here is a list of the possible values and what they mean.

Value	Sound	Examples
0 – 2	Strong, Pure	Fifth, Octave
3 - 4	Warm	3rds, 6ths, Major/Minor Triads
5	Sentimental, Bitter-Sweet,	Major 7 th , Minor add 9
	Emotional, Sad	
6	Magical, Dark, Intense,	Minor 7b5, Major add #11. Dominant 7th
	Mysterious, Comedic	
7+	Scary, Foreboding, Eerie,	Augmented Triad, Major 7#5, Minor #7
	Otherworldly, Comedic	

By taking advantage of these parameters, one can find a chord on the list that is perfect for a given musical situation. First, one would choose a chord that has the right number of notes, depending on the piece. For example, when writing a four part chorale, chords containing three or four notes would be appropriate. Second, one would choose a *complexity* level that conveys the right degree of emotion. For example, for a passage that is magical one would use a chord with a complexity of 6. If one desires an even more intense sound, choose a chord having a rating of 7 or higher.

Modes

In addition to the two pages of chords, there is a breakdown of modes for seven different parent scales. Although many books talk about the notion of hundreds of different scales, the truth is that any combination of notes (excluding chromatic ones) can be derived from these seven scales.

Major (Diatonic) Harmonic Minor Melodic Minor Harmonic Major (Major scale with b6) Octatonic (Diminished) Augmented (Minor 3rd + Minor 2nd, repeating) Whole Tone

	lexity				
Notes	Comp	Standard Notation	Pitch Classes	Intervals	Description
1	0	С	0	12	Unison, Octave
2	1	CF	05	57	Perfect 5th, Perfect 4th
2	2	C D	02	210	Major 2nd, Minor 7th Minor 2nd, Major 6th
2	3	C ED	0.4	48	Major 3rd, Minor 6th
2	5	C Db	01	1 11	Minor 2nd, Major 7th
2	6	C F#	06	66	Tritone, b5, #4
3	2	CFG	057	525	Sus 4
3	3	CDF	025	237	(Minor 7 omit 5)
3	3	C Eb F	035	327	(Minor 7 or Dominant 7 omit 3)
3	4	C Fh G	024	345	Minor Triad
3	4	CEG	047	435	Major Triad
3	5	C Db Eb	013	129	(Phrygian 3 note cluster)
3	5	C D Eb	023	219	(Minor 3 note cluster)
3	5	C Db F	015	147	(Major 7 omit 5)
3	5	CEF CDF#	045	417	(Major 7 omit 3)
3	6	C F F#	026	246 426	(Minor 7b5 omit 3)
3	6	C Eb Gb	036	336	Diminished Triad
3	6	C Db Gb	016	156	
3	6	C F Gb	056	516	
3	7	C Db E	014	138	(Minor #7 no 5)
3	7	C D# E	034	318	(Major 7#5 no 3)
5 4	0 3	CEG#	048	444 5252	Dominant 7sus4
4	4	CDEG	0247	2235	Major add 9
4	4	C Eb F G	0357	3225	Minor add 11
4	4	C Eb G Bb	03710	3432	Minor 7
4	5	C Db Eb F	0135	1227	(Phrygian 4 note cluster)
4	5	CDEF	0245	2217	(Major 4 note cluster)
4 4	5	C D Eb G	0233	2127	Minor add 9
4	5	CEFG	0457	4125	Major add 11
4	5	CEGB	04711	4341	Major 7
4	6	C Db Eb Gb	0136	1236	Diminished add b9
4	6	C Eb F Gb	0356	3216	Diminished add 11
4 4	6	C DEF#	0246	2226	(Lydian 4 note cluster) (Diatonic half step pair)
4	6	C Db Eb G	0137	1245	Minor add b9
4	6	CEF#G	0467	4215	Major add #11
4	6	C Db F G	0157	1425	(Major 7b5)
4	6	CDF#G	0267	2415	(Major 7sus4)
4	6	C Eb Gb Bb	03610	3342	Half Diminished, Minor 7b5
4 4	6 7	C Db F F#	04710	4332	Dominant 7
4	7	C D F Gb	0256	2316	(Dominant 7#9 no 5)
4	7	C Db E G	0147	1335	Major add b9
4	7	C Eb F# G	0367	3315	Minor add #11
4	7	CD#EG	0347	3135	Major add #9
4	7	C Db F# G C Db Fb F	0167	1515	(Octatonic Half Step Pair)
4	8	C Db E F	0134	1317	(Harmonic minor half step pair)
4	8	C D Eb Gb	0236	2136	Diminished add 9
4	8	C D# E F#	0346	3126	
4	8	C Eb G B	03711	3441	Minor #7
4	8	CEG#B	04811	4431	Major 7#5
4	8 8	CEG#Bb	04810	4422	Dominant 7#5
+ 4	9	C Eb Gb A	0369	3333	Fully Diminished 7th
5	4	CDEGA	02479	22323	Pentatonic, C6 add9
5	5	C D Eb F G	02357	21225	(Minor 5 note cluster)
5	5	CDEFG	02457	22125	(Major 5 note cluster)
5	5	(CDEGB)	(024711)	(22341)	Major 9
5 5	э 6	(CDEDGBD) CDbEbECb	(023710)	(21432) 12216	Minor 9 (Locrian 5 note cluster)
5	6	C Db Eb F G	01357	12225	(Phrygian 5 note cluster)
5	6	CDEF#G	02467	22215	(Lydian 5 note cluster)
5	6	C D Eb F Ab	02358	12342	(Minor 7b5b9)
5	6	C Eb F Gb Ab	03568	32124	

	xity				
ş	ple				
ote	mo	Standard Notation	Bitah Classes	Intornals	Description
Z 5	6	C Dh Fh Gh Ah	01368	12324	Description
5	6	C D F G Ab	02578	23214	
5	6	C Db F Gb Ab	01568	14124	
5	6	C D Eb G Ab	02378	21414	
5	6	C D E F# A	02469	22233	
5	7	C Db Eb F# G	01367	12315	
5	7	C Db E F# G	01467	13215	
5	7	C Db E F# A	01469	13233	
5	7	CDFGbA	02569	23133	
5	8	C D E D E C F#	01346	21216	
5	8	C Db F F G	01457	13125	
5	8	C D Eb F# G	02367	21315	
5	8	C Db Eb E G#	01348	12144	
5	8	C Db E F Ab	01458	13134	
5	8	C D# E G Ab	03478	31314	
5	8	C D E F Ab	02458	22134	
5	8	C D# E F# G#	03468	31224	
5	8	C D Eb Gb Ab	02368	21324	
5	8	C D F Gb Ab	02568	23124	
5	8	C Db E F# G#	01468	13224	
5	8	C D E G Ab	02478	22314	
5	8	CDEF#G#	02468	22224	
5	8	C Db E G Ab	01478	13314	
5	9	C Db Eb E G	01347	12135	
5	9	C D# E F# G	03407	12222	
5	9	C D Eb Gb A	01369	21333	
6	5	CDEEGA	024579	221223	
6	6	C Db Eb F Gb Ab	013568	1221223	
6	6	C D Eb F G Ab	023578	212214	
6	6	C Db Eb F G Ab	013578	122214	
6	6	C D Eb F G A	023579	212223	
6	6	C D E F# G A	024679	222123	
6	7	C Db E F# G A	014679	132123	
6	8	C Db Eb E F# G#	013468	121224	
6	8	C D E F G Ab	024578	221214	
6	8	C D Eb F Gb Ab	023568	212124	
6	8	C Db Eb F G A	013579	122223	
6	8	CDEF#G#A	024689	222213	
6	8	C Db E F G A	014579	131223	
6	8	CDEFG#A	024589	221313	
6	9	C DD ED E F# G	013467	121215	
6	9	C Db Eb E G Ab	013470	131214	
6	9	C Db Eb E F# A	013469	121214	
6	9	C D Eb F Gb A	023569	212133	
6	9	C Db Eb F Gb A	013569	122133	
6	9	C Db Eb E G A	013479	121323	
6	9	C Db Eb F# G A	013679	123123	
6	9	C D Eb F# G# A	023689	213213	
6	9	C D Eb F# G A	023679	213123	
6	9	C D# E G Ab B	014589	313131	Augmented Scale
6	10	C D E F# G# A#	0246810	222222	Whole Tone Scale
7	6	CDEFGAB	02457911	2212221	Major Scale
7	8	C D Eb F G Ab B	02357811	2122221	Melodic Minor Scale
7	9	C Db Eb E F# G A	0134679	1212123	Henry ends Miner C. 1
7	9		02357811	2122131	Harmonic Minor Scale
7	9		02457811	2212131	Harmonic Major Scale (Major b6)
/	9		012467010	2121213	Octatoria Scala
0	10		01340/910	112121212	Octatonic Scale

Modes of Seven Parent Scales

Major														
	1	2			3		4		5		e	5		7
Ι	1	2			3		4		5		6	5		7
II	1	2			b3		4		5		e	5	1	b7
III	1	b2			b3		4		5		k	56	1	b7
IV	1	2			3		#4		5		6	5		7
V	1	2			3		4		5		e	5	1	b7
VI	1	2			b3		4		5		ł	56	1	b7
VII	1	b2			b3		4		b5		ł		1	h7
, 11	-				20		-		20					
Melodic M	inor													
	1	2			3		4		5		6	5	,	7
T	1	2			b3		1		5		6	,		7
I	1	 h2			b3		1		5		6	5		, b7
	1	2			3		#1		#5		6	, ;	r	7
111	1	2			3		#4		#J			;		/ h7
1V V	1	2			3		#4		5		1)		b7
V	1	2			5		4		Э 1-Б		1)6 - (D7
VI	1	2			b3		4	、	15		1	<u> </u>		b7
VII	1	b2			b3		b4 (3)	65		ł	56		67
Harmonic	Minor	-			-		1.		1 -			-	<u> </u>	
	1	2			3		4		5		e	,		7
I	1	2			b3		4		5		ł	56		7
II	1	b2			b3		4		b5		e	5	1	b7
III	1	2			3		4		#5		6	5		7
IV	1	2			b3		#4		b		e	5	1	b7
V	1	b2			3		4		5		ł	56	1	b7
VI	1	#2			3		#4		5		e	5		7
VII	1	b2			b3		3		#4		#	# 5		6
	•													
Harmonic	Major													
	1	2			3		4		5		6	5		7
Ι	1	2			3		4		5		ł	56		7
II	1	2			b3		4		b5		6	5	1	b7
III	1	b2			b3		b4 (3)	5		ł	56	1	b7
IV	1	2			b3		#4	/	5		6	5		7
V	1	b2			3		4		5		e	<u>5</u>	1	b7
VI	1	#2			3		#4		#5		e	5	,	7
VII	1	b2			b3		4		b5		1	06	1	bb7(6)
	-				20		-		20		^			0.0.1 (0)
Octatonic														
	1	2		3		4		5		6		7		8
I	1	- b2		#2		3		#4		5		6		b7
II	1	2		h3		4		h5		bb		6		7
	<u> </u>	-		00		I						0		<u> </u>
Augmente	đ													
Augmente	u 1		2			3		Δ			5		6	
T	1		∠ #⊃			2		-+			5 h6			
1	1		#∠ b2			2		3			00 #F			
_ 11	1		b2			3		4			#5		6	
1A71. 1 T														
whole I on	e		0			2					-			
L	1		2			3		4			5	-	6	
1	1		2			3		#4 (1	b5)		#5 (t	96)	#6) (b7)

Contour

Contour refers to the general up and down motion of series of individual notes played in order. It ignores small differences in the height of each note (such as adding a sharp here and there) and instead looks at the overall shape. Contour is the main factor that affects our ability to recognize a melody, even more than the notes contained in it.

A very concise but powerful approach to contour is presented here. It involves looking at numerous basic contours and than examining ways that those contours can be combined. The basic contours are called *contour classes* and the methods of combining them are called *contour patterns*. By using the contour classes in conjunction with the contour patterns, an unlimited number of amazing combinations can be formed.

An example of each contour is presented using a C Major arpeggio, and using a C Major scale. This is done to emphasize the fact that the notes one chooses to use with a given contour are arbitrary. It's the overall shape that is of importance.

Take a look at the Contour Patterns page. The first measure shows an example of *repeat*. A repeat takes a given contour (in this case, just a single note) and repeats it several times. A *line* is simply a series of notes in ascending or descending order. It need not be a diatonic scale, as shown here. Any group of notes in ascending order works equally well. Next we see a *free* contour. This is a contour that has no real pattern. A *pivot* is a more complex pattern. A pivot is a pattern that alternates between one note from one contour, and another note from another contour. The most common and effective application is to alternate between a line and a repeat.

The list is arranged by the number of rhythmic events in each contour, referred to as *attacks*, then by the number of different pitches. Because some contours have repeated notes the number of attacks may differ from the number of pitches. First you will see contours with just one attack, then two attacks, then three attacks, then four attacks. Within each of those groups, contours with fewer pitches are shown first, while those with more pitches are shown last. They are also sorted by complexity. Contours with a very simple shape having few awkward leaps appear sooner in the list than those with a more erratic shape. Finally, all the contours on each line have a similar shape. They are derived by taking the first contour and flipping it to create four different variations. The variations are normal, retrograde (flipped horizontally), inverse (flipped vertically), and inverse retrograde (flipped both ways). Occasionally, two of these are duplicates. This organization is designed to help you find the right contour for a given situation.

More complex patterns can be created by taking one of the fundamental patterns listed above and replacing single notes with contours from the Contour Classes list. Take a look at the examples on the Contour Patterns page. One can begin with a repeat pattern, then replace the single notes with one of the contour classes to form a more complex repeating pattern. One can begin with a line and replace single notes with a more complex pattern to form a sequence. One can even start with a free contour, and then replace the individual notes with a more complex pattern as well. Using a pivoting pattern, one can replace either the repeating portion, the line portion, or both to form many other variations. Examples of each of these techniques are listed.

Contour Patterns





Contour Classes







Rhythm

This chapter focuses on all the rhythmic possibilities that can be created given a finite number of notes or rests. Each note or rest is referred to as a rhythmic *unit*. The patterns listed go up as high as six units. Longer patterns can be created simply by concatenating two patterns already shown on the list.

The way each pattern is written emphasizes the *attack*. That is, in no way are these patterns trying to provide information about duration. It is up to the discretion of the composer to make the notes as long or short as necessary. All that is indicated here is *when*, not *how long*.

The patterns are sorted according to how many attacks (events) are in the bar, and whether those events occur on strong or weak beats. Patterns that contain a lot of events on strong beats are near the top of the list. Patters with events happening on weak beats occur closer to the bottom of the list. By looking at *Units* column, one can find a pattern with the appropriate number of subdivisions for a given passage of music. By looking at the column called *Attacks* one can find a pattern with the right number of rhythmic events. Each example on the list is shown with four possible durations in mind, namely sixteenth note, eighth note, quarter note, and half note. There is no reason, however, that one could not use another duration instead.

Similar to other materials in this handbook, one may use the list for reference, for inspiration, or one may study each item thoroughly over time.

The following techniques may be used in conjunction with the patterns given.

Augmentation – Taking a rhythmic pattern and multiplying all the durations by the same amount.

Diminution – Taking a rhythmic pattern and dividing all the durations by the same amount.

Offset – Taking a rhythmic pattern, or a single rhythmic event, and shifting it either later or earlier in time.

Addition – Taking a rhythmic pattern and adding additional events.

Subtraction – Taking a rhythmic pattern and subtracting events.

Concatenation – Taking a pattern and following it with a different pattern in time.

Repetition – Taking a pattern and repeating it.

Layering – Taking two patterns and playing them simultaneously.

Jnits	Attacks											Rh	ivth	imio	: Pa	atte	rns											
1	1	3						D								•						0						
2	1	D	ą					D	9							•	ž					0	-					
2	1	r Y	8					, 9	D							ž	•					 -	0				_	
2	2	9	P					D	p							•	•					 0	0				_	
3	1]	9	ą				, D	9	٩						•	ž	ş				0	-	-				
3	1	Y	₿	7				9	p	9						ž	٢	ş				 -	0	-				
3	1	4	9	₿				9	9	p						ž	ž	٢				 -	-	0				
3	2	9	₿	7				p	p	9						•	٢	ş				0	P	-				
3	2	2	7	₿				P	9	p						•	ş	٢				 0	-	P				
3	2	7	₿	₿				9	Ø	p						ž	•	٢				-	P	P				
3	3	2	₽	₿				P	Ø	p						•	٢	٢				0	P	P				
4	1		7	7	9			þ	۶	۶	۶					•	¥	ş	ş			0	-	-	-			
4	1	7	7	₿	7			7	۶	p	7					r	ş	•	ş			-	-	0	-			
4	1	9	₽	7	7			7	Ø	7	7					ž	٢	¥	\$			 -	°	-	-			
4	1	9	7	7	₽			7	7	9	Ø					ž	¥	ş	٢			-	-	-	٢			
4	2		7	₽	7			p	7	p	9					•	ş	•	ş			 0	-	P	-			
4	2	9	₽	7	9			P	Ø	٩	۶					•	٢	¥	\$			 0	°	-	-			
4	2	9	7	7	₽			Ø	۶	7	Ø					•	¥	ş	٢			0	-	-	ſ			
4	2	7	₽	₽	7			7	Ø	p	7					ž	٢	٢	\$			 -	ſ	ſ	-			
4	2	7	7	₿	₽			7	7	p	p					ž	\$	٢	٢			 -	-	ſ	٢			
4	2	7	₽	7	₽			9	Ø	۶	P					2	٢	¥	٢			 -	°	-	٢			
4	3	2	₽	₿	7			Ø	Ø	Ø	7					•	٢	٢	\$			0	°	ſ	-			
4	3	9	7	₿	₽			P	۶	Ø	P					•	¥	٢	٢			 0	-	ſ	٢			
4	3	2	₽	9	₽			Ø	Ø	7	Ø					•	٢	¥	٢			 0	°	-	٢			
4	3	7	₽	₽	₽			7	Ø	Ø	Ø					\$	٢	٢	•			 -	ſ	ſ	٢			
4	4		₽	₿	₽			Ø	Ø	Ø	Ø					•	٢	٢	٢			0	°	ſ	٢			
5		2	7	7	4	7		P	۶	۶	۶	٩				•	\$	\$	\$	\$		 0	-	-	-	-		
5		9	7	₿	7	7		7	۶	Ø	7	9				\$	Ł	٢	\$	\$		 -	-	ſ	-	-		
5		4	₽	9	9	4		7	Ø	۶	۶	۶				\$	•	\$	\$	\$		 -	ſ	-	-	-		
5		7	9	9	₽	4		9	۶	9	Ø	9				ž	\$	\$		\$		 -	-	-	ſ	-		
5	1	7	7	9	7	₽		9	7	9	7	Ø				ş	\$	\$	\$	•		 -	-	-	-	°.		
2	 ²	2	7	B	1	7		2	9	p	7	٦					\$		ş	\$		ſ	-	ſ	-	-		

	S
(0	÷
Ľ,	ă
Ξ	£.
	7

<u> </u>	٩.																												
5	2	2	₿	ą	7	7			P	p	۶	٩	٩			•	•	ş	ž	ž			0	0	-	-	-		
5	2	9	7	7	8	7			0	۶	9	0	9			•	ł	ş	•	¥			0	-	-	P	-		
5	2]	Ÿ	ą	7	9			, D	۹	9	9	D			•	ł	ş	ž	•			ρ	-	-	-	P		
5	2	, 7	0	8	7	7			, 9	0	0	9	9			ž	•	٩	ž	ž			-	0	0	-	-		
5	2	7	7	ļ	8	7			٩	, 9	D	0	9			ž	2	•	•	2			-	-	0	٥	-		
5	2	7	4	P	7	B			9	9	D	7	D			ž	ž	•	ž	•			-	-	0	-	P		
5	2	7	₿	9	₿	4			9	p	9	p	9			ž	•	ş	•	2			-	P	-	p	-		
5	2	4	₽	7	7	₽			٩	p	9	۶	p			ş	•	ş	ş	•			-	٩	-	-	٩		
5	2	7	7	7	₿	₿			٩	۶	۶	p	p			ş	£	ş	•	•			-	-	-	٩	٩		
5	3	2	₿	₿	7	7			P	p	p	۶	9			•	•	•	ş	ş			٥	P	P	-	-		
5	3	2	7	₿	₿	7			P	٩	p	P	۶			•	ş	•	•	ş			P	-	P	٩	-		
5	3	2	4	₿	7	₿			p	٩	p	٩	Ø			•	¥	٢	ş	r			P	-	P	-	p		
5	3	2	₿	4	₿	7			P	p	7	p	7			•	•	ş	٢	£			0	P	-	٩	-		
5	3	2	₿	4	7	₿			P	p	7	۶	p			•	•	ş	ş	•			0	P	-	-	p		
5	3	2	7	7	₿	₽			P	٩	۶	P	P			•	ş	ş	•	•			0	-	-	P	P		
5	3	7	₽	₿	₽	7			٩	p	p	P	۶			ž	•	•	•	ž			-	0	°	ſ	-		
5	3	7	₽	₿	7	₽			9	þ	þ	٩	Ø			ž	•	•	ş	•			-	P	P	-	P		
5	3	4	7	₿	₿	₽			٩	7	p	Ø	Ø			ž	ž	٢	٢	•			-	-	ſ	٢	٩		
5	3	7	₽	7	₿	₽			٩	p	9	P	p			ž	•	ş	٢	•			-	ſ	-	٢	٩		
5	4	3	₽	₿	₿	4			P	Ø	p	P	۶			•	•	•	•	£			°	P	ſ	٩	-		
5	4	3	₽	₿	7	₽			2	Ø	p	۶	Ø			•	•	٢	¥	٢			°	P	ſ	-	٩		
5	4	2	4	₿	₿	₽			P	٩	Ø	Ø	Ø			•	ž	ſ	•	٢			P	-	ſ	٩	٩		
5	4	2	₽	7	₿	₽			P	Ø	9	Ø	Ø			•	•	ş	٢	٢			ſ	P	-	٩	٩		
5	4	7	₽	₿	₿	₽			9	Ø	Ø	Ø	Ø			ž	•	٢	٢	٢			-	P	P	٩	٩		
5	5	2	₿	₿	₿	₿			P	p	p	P	p			•	•	٢	٢	•			ſ	ſ	ſ	٢	٢		
6	1	2	4	7	7	4	7		P	7	۶	۶	۶	٩		•	ž	ş	ş	ł	ş		P	-	-	-	-	-	
6	1	7	4	7	₿	4	Ÿ		٩	۶	۶	Ø	۶	٩		ž	ł	ş	٢	\$	ş		-	-	-	٢	-	-	
6	1	4	₽	9	4	4	4		9	Ø	٩	٩	۶	٩		ł	•	ş	Ł	\$	ş		-	P	-	-	-	-	
6	1	4	4	7	4	₽	7		9	7	۶	۶	Ø	٩		ş	£	ş	ş	•	3		-	-	-	-	٩	-	
6	1	7	4	₿	4	4	7		9	٩	Ø	٩	۶	٩		ł	\$	٢	ş	\$	\$		-	-	ſ	-	-	-	
6	1	7	4	7	4	4	₿		9	٩	٩	٩	۶	Ø		ž	\$	ş	\$	\$	٢		-	-	-	-	-	°	
6	2	3	4	7	₿	4	7		P	٩	٩	þ	۶	7		•	\$	ş	•	ş	ş		0	-	-	ſ	-	-	

Units Attacks

÷	•
· —	
_	- +
~	
_	

6	2	B	₿	4	4	4	Ÿ		P	p	٩	۶	۶	٩		•	•	ş	ş	ş	ş		0	P	-	-	-	-	
6	2		Ÿ	4	4	₿	Ÿ		P	٩	٩	٩	p	٩		•	¥	ş	ş	٢	ş		0	-	-	-	0	-	
6	2		Ÿ	₿	4	7	Ÿ		P	٩	p	٩	۶	٩		•	ş	•	ş	ş	ş		0	-	P	-	-	-	
6	2	B	Ÿ	4	4	7	₿		P	۶	7	۶	۶	p		•	ł	ş	¥	ş	٢		0	-	-	-	-	٩	
6	2	4	₿	4	₿	7	4		7	p	٦	p	۶	٩		ž	•	ş	•	ş	ş		-	P	-	٩	-	-	
6	2	7	Ÿ	7	₿	₿	4		7	۶	7	p	Ø	٩		ž	ł	ş	r	٢	ş		-	-	-	٩	0	-	
6	2	7	7	₿	₽	7	7		7	۶	p	p	7	۶		ž	ž	٢	r	ş	ş		-	-	P	٩	-	-	
6	2	7	7	7	₽	7	₽		7	۶	٩	P	9	P		ž	ş	ş	•	ş	•		-	-	-	P	-	٩	
6	2	7	P	7	7	P	7		7	P	٩	۶	p	۶		ž	•	ž	ž	ſ	ž		-	P	-	-	0	-	
6	2	7	P	P	7	7	7		7	P	p	۶	7	۶		r	•	•	ž	ş	ž		-	0	0	-	-	-	
6	2	7	₽	4	4	7	₽		7	P	٩	۶	9	P		ž	•	ş	ş	ş	•		-	P	-	-	-	P	
6	2	7	Ÿ	₿	4	₿	4		٦	٩	Ø	٩	Ø	٩		ž	ž	٢	ž	٢	ł		-	-	P	-	0	-	
6	2	7	Ÿ	7	7	₿	₽		٦	٩	٩	٩	Ø	þ		ž	ž	ş	ž	٢	٢		-	-	-	-	P	٢	
6	2	7	7	₿	7	7	₽		7	۶	þ	۶	۶	þ		ž	ł	٢	ž	ş	•		-	-	P	-	-	P	
6	3		₿	7	₽	7	7		þ	P	۶	p	۶	۶		•	•	ş	٢	ş	ş		0	٢	-	٢	-	-	
6	3		7	7	₽	₿	7		P	۶	٩	P	p	۶		•	\$	ş	•	٢	ş		0	-	-	٢	P	-	
6	3		7	₿	₿	7	7		P	٩	Ø	Ø	۶	٩		•	¥	٢	•	Ł	\$		0	-	P	٩	-	-	
6	3		7	7	₿	7	₽		P	۶	٦	Ø	۶	Ø		•	ł	ş	•	ş	٢		0	-	-	٢	-	ſ	
6	3		₿	7	7	₿	7		P	P	۶	۶	Ø	۶		•	•	ş	\$	٢	ş		0	ſ	-	-	٩	-	
6	3	Ð	₿	₿	7	7	7		þ	Ø	p	۶	7	۶		•	•	٢	\$	ş	ş		0	ſ	ſ	-	-	-	
6	3		₿	7	7	7	₽		P	Ø	۶	7	7	p		•	•	ş	\$	\$	٢		0	ſ	-	-	-	٢	
6	3	₽	7	₿	4	₿	4		P	٩	Ø	9	Ø	٩		•	\$	٢	\$	٢	\$		0	-	ſ	-	P	-	
6	3	Ð	7	4	4	₿	₽		P	۶	٩	۶	Ø	Ø		•	\$	ş	\$	٢	٢		0	-	-	-	P	٩	
6	3		7	₿	7	7	₽		Ø	۶	Ø	۶	۶	Ø		•	ł	٢	\$	\$	٢		0	-	ſ	-	-	٢	
6	3	7	₿	7	₽	₽	7		7	Ø	۶	Ø	Ø	۶		\$	•	\$	٢	٢	\$		-	ſ	-	٢	٢	-	
6	3	7	₿	₿	₿	7	4		7	Ø	Ø	Ø	۶	٩		ž	•	٢	•	\$	ş		-	ſ	ſ	٩	-	-	
6	3	7	₿	4	₽	7	₽		7	Ø	٩	Ø	7	Ø		ž	•	ş	٢	\$	٢		-	ſ	-	٩	-	٩	
6	3	1	7	₽	₽	₿	7		7	۶	Ø	Ø	Ø	۶		\$	\$	٢	٢	٢	ş		-	-	ſ	٢	P	-	
6	3	1	7	7	₽	₿	₽		7	9	٩	p	Ø	Ø		\$	\$	ş	٢	٢	ſ		-	-	-	ſ	ſ	٢	
6	3	1	7	₽	₽	7	₽		7	9	Ø	Ø	7	Ø		ş	\$	٢	٢	\$	٢		-	-	ſ	٢	-	٢	
6	კ ი	4	₿	₽	7	₿	7		7	Ø	Ø	۶	Ø	۶		\$	•	ſ	\$	٢	ş		-	ſ	ſ	-	P	-	
0	د	1	₿	9	4	₿	B		7	P	۶	۶	þ	P		ţ	•	ş	\$	ſ	ſ		-	ſ	-	-	ſ	٢	

Jnits vttacks

\supset	Ā																											
6	3	7	₿	₿	7	4	₿	۶	p	Ø	٦	٦	Ø		ş	•	ſ	ş	ş	•		-	0	0	-	-	٢	
6	3	7	7	₿	4	₿	₽	۶	۶	p	7	p	p		ž	¥	•	ş	٢	•		-	-	P	-	P	٩	
6	4	2	₿	7	₽	₿	Ÿ	P	p	٩	P	p	9		•	•	ş	•	٢	ş		P	P	-	P	P	-	
6	4	2	₿	₿	₽	7	Ÿ	p	p	p	P	۶	٩		•	•	٢	•	¥	ş		0	P	P	P	-	-	
6	4	9	₿	7	₽	7	₽	p	p	۶	P	9	Ø		•	•	ş	•	¥	٢		٥	p	-	P	-	٩	
6	4	2	7	₿	₽	₿	Ÿ	P	۶	p	P	p	٩		•	ş	•	•	٢	ş		0	-	P	P	P	-	
6	4	2	7	7	₽	₿	₽	P	۶	٩	P	Ø	Ø		•	£	ş	•	٢	٢		P	-	-	P	P	٩	
6	4	2	7	₿	₽	7	₽	P	۶	p	P	7	p		•	£	٢	•	¥	٢		°	-	°	P	-	٩	
6	4	9	₿	₿	7	₿	7	p	p	p	7	p	9		•	•	•	ş	٢	ş		٥	P	P	-	P	-	
6	4	2	₿	7	7	₿	₿	p	p	٩	7	p	p		•	•	ş	ş	٢	٢		٥	P	-	-	P	٩	
6	4	9	₽	₿	7	7	₽	p	p	p	۶	7	Ø		•	•	•	ş	ş	٢		0	P	°	-	-	٩	
6	4	2	4	₿	7	₿	₽	p	٦	p	۶	Ø	p		•	ž	•	ż	٢	٢		0	-	0	-	0	٩	
6	4	7	₿	₿	₽	₿	ą	۶	p	p	p	Ø	7		ş	•	٢	٢	٢	ş		-	0	°	0	0	-	
6	4	7	₿	ą	2	₿	₽	7	p	٩	p	Ø	p		ş	•	ş	٢	٢	٢		-	0	-	0	0	٩	
6	4	4	₽	₿	₽	7	₽	7	p	p	p	7	Ø		ş	•	•	۴	¥	٢		-	P	°	٩	-	٩	
6	4	7	4	₿	2	₿	₽	7	7	p	p	Ø	p		ş	ł	•	٢	٢	٢		-	-	°	P	0	٩	
6	4	7	₿	₿	7	₿	₿	۶	p	p	7	p	p		ž	•	•	ş	٢	٢		-	P	°	-	P	٩	
6	5	2	₿	₿	₽	₿	Ÿ	p	p	p	P	p	٩		•	•	٢	•	٢	ş		0	P	P	P	P	-	
6	5	2	₿	Ÿ	₽	₿	₽	p	p	٩	P	p	p		•	•	ş	•	٢	•		0	P	-	P	P	٩	
6	5	2	₿	₿	₽	7	₽	P	p	p	P	۶	p		•	•	•	•	¥	•		0	P	P	P	-	٩	
6	5	2	7	₿	₽	₽	₽	p	۶	p	P	p	p		•	¥	•	•	٢	•		0	-	P	P	P	٩	
6	5	3	₿	₿	4	₿	₽	p	p	Ø	7	Ø	Ø		•	•	•	ş	٢	•		p	P	P	-	0	٩	
6	5	4	₽	₽	₽	₽	₽	۶	p	p	P	Ø	p		ş	•	•	•	٢	•		-	٩	°	P	P	٩	
6	6	2	₽	₿	₽	₽	₽	P	p	p	P	Ø	Ø		^	•	٢	•	٢	٢		٩	P	P	P	P	٢	

Timbre

Timbre refers to the tone quality or color of a particular sound. Timbre is certainly the least understood of all musical parameters, but one of the most important. Its importance is evident when we consider where the largest amount of money is spent in creating music. Musicians spend thousands of dollars on their instruments, and recording engineers spend hundreds of thousands of dollars on equipment designed to record those instruments.

The term *timbre* was chosen rather than *instrumentation* because it conveys the fact that even in capturing the sound of a single instrument, there are hundreds of variables at play. With the advent of computers and sound synthesis, the definition between an instrument vs. the technology used to process that instrument is virtually non-existent.

On the following page you will find a list of instrument ranges. This gives us at least a basic overview of all the common orchestral and acoustic instruments, and their capabilities. Here are some additional factors that, for a given instrument, will affect how that sound is rendered on a recording.

Room Instrument location Microphone Mic location Mic pre-amp Analog to digital converter Reverb, compression, limiter, and other effects.

Regarding electronic instruments, the number of possibilities go at least one thousand fold beyond those of acoustic instruments. A full survey of electronic synthesis techniques is beyond the scope of this book. However, there are online and print resources available to aid the composer in this area.

Instrument Ranges







Common Clefs





Alto Clef



Tenor Clef



releasion cler

Range

Range is a very effective emotional tool that happens to be one dimensional, thus is easy to control. That is, an increase in range yields a brighter overall sound, while lowering the range yields a darker and heavier sound. This rather simple view works well on the piano, but becomes a little more complicated once we integrate other instruments.

Instruments are designed to work best in the center of their range. This is where one will commonly get the sweetest tone, the best control, and the best dynamics.

Generally speaking, when instruments play in their lowest register, they tend to sound flabby and lack power. This is most true of the brass, somewhat true of the woodwinds, and less true of the strings. If you want a section to fade into the background, write them in their lowest register and the sound becomes very transparent, with the exception of the oboe. This sound can be very rich and pleasing, but also will tend to blend in and lack presence.

Even so, we associate the low register with weight, mass, and power. In order to achieve this effect, one must use a low instrument, rather than writing a medium instrument at the bottom of their register. For example, the tuba can play comfortably several ledger lines below the bass clef. Therefore it can actually produce a sound in that register that is loud and effective. The trombone cannot. When you want instruments to sound loud and effective put them in their middle or upper middle register. If the pitch material to be played does not sit in a good register for the instrument in question, choose another instrument.

Conversely, instruments in their higher register typically sound strident. That is, the sound is usually intense and a bit strained. This effect can actually sound quite beautiful. The French Horn and Cello sound divine in their higher registers, as do many other instruments. The high register is often capitalized on when a piece reaches a climax. When instruments are written in their higher register, they have more cutting power. That is to say they will be heard more than other instruments, even if they aren't actually playing a higher note. Write them too high and the sound will start to crack or become a nuisance. When you want an instrument to be heard above its section, write it in the high register, above the staff, and write the other instruments in their low register. If need be, swap which passages are played by which sections. A good rule of thumb is to write an instrument *above the staff* when an intense, penetrating sound is desired, but *on the staff* for most normal applications.

Using a variety of medium, low, and high registers is key for effective and interesting writing.

Dynamics

Dynamics are the simplest and most effective tool in our musical palette. Unlike elements such as pitch, which are multidimensional and very hard to master, dynamics are linear. An increase in dynamics results in an increase in intensity. A decrease in dynamics results in a decrease in intensity. Dynamics add richness and depth to music. Listed here are some basic dynamic markings, as well their meanings.

Recognize that the listener's perception of dynamics is *relative*. That is to say, a loud passage following another loud passage will not feel very intense, whereas a loud passage followed by a quiet passage will feel intense. Utilize contrast to achieve the maximum dynamic effect.

Also, if one desires a particular instrument to sound louder than the others, it is often advisable to have the other instruments rest, so as not to compete. Big and muddy does not always equal loud. In the orchestra, complimenting the brass section with woodwinds will generally *decrease* the intensity of the brass because it smooths out the sound.

Lastly, different instruments have different dynamic limitations. Wind instruments, and especially brass instruments, generally cannot play quietly in their highest register. Conversely, many instruments generally cannot play loud in their low register. The oboe is an exception to this, and cannot play quietly in its low register. Although a common assumption is that writing a particular instrument low will result in a powerful sound, it is more effective to use most instruments in the center of their range. If a low, powerful sound is desired, choose an instrument with a lower register.

Marking	Name	Meaning
ррр	Pianississimo	Very very soft
pp	Pianissimo	Very soft
p	Piano	Soft
тр	Mezzo piano	Medium soft
mf	Mezzo forte	Medium loud
f	Forte	Loud
ff	Fortissimo	Very Loud
fff	Fortississimo	Very Very Loud
sp	Subito Piano	Suddenly Quiet
sf	Subito Forte	Suddenly Loud
fp	Forte piano	Loud then soft
crescendo	Crescendo	Get louder over time
decrescendo	Decrescendo	Get softer over time

Form

Form refers to organizing musical elements in time to create a pattern. Form is the factor that governs how all the other musical elements come together. As such it is very powerful.

The way that each form is notated in this chapter uses letters to denote different bits of musical content. For example, a typical form would be AABA. The notation here assumes that you have several different pieces of musical material, and that they are all of comparable length. That doesn't necessarily mean they have to be of *exactly* the same length, but similar length is important. This also assumes that the letter associated with a given chunk of material has some bearing on its location in the song. For example, all the forms here begin with the letter A. If you want to change the order of your material, try assigning different letters to each item.

It is key to know that Form is more general than the other parameters of music covered in this handbook. As such, these forms can be used to help you organize rhythms, contours, pitches, dynamics, or whatever elements you desire. For example, you could have three different rhythmic patterns labeled A, B, and C and organize them according to an ABBC pattern. Practice employing these forms using all the other elements discussed in this book including rhythm, contour, dynamics, range, pitch, and timbre.

The length of each chunk of material in a given form is at the discretion of the composer. Forms are equally useful for organizing short bits of material, such as 1 measure, vs. longer material, such as an entire section of a song. Try using them at each of the following time scales:

1 unit = 1 measure 1 unit = 1 phrase 1 unit = 1 section

Generally, all forms serve to do one or more of the following:

Repeat something that has been done before. Create a change, either gradual or abrupt.

Using Forms

We will look at examples of how to employ these forms in conjunction with other musical parameters discussed in this book. We will also look at examples of how to use them over small and large time scales.

Two Part Forms	Four Part Forms
AA	AAAA
AB	AAAB
	AABA
Three Part Forms	AABB
AAA	ABAA
AAB	ABAB
ABA	ABBA
ABB	ABBB
ABC	AABC
	ABAC
	ABBC
	ABCA
	ABCB
	ABCC
	ABCD

We will take the form ABBC and apply it to rhythm. We select three rhythms which we will call A, B, and C.



Now we arrange the rhythms in an ABBC pattern...



Next we will apply forms to instrumentation. We choose a form, this time ABA. We select two instruments which we will call A, and B. We assign instruments of our choosing to each letter.

A = Flute B = Oboe

Now we take a passage of music...



Then we assign instruments to the passage according to the ABA form we have chosen...



So far, we have looked at how to use form to govern individual musical elements. Now we will use it more holistically.

We select a form ABCB. Then we choose three measures of musical material, which we will label A, B, and C.



Now we apply the ABCB form...



Using the forms over a larger time scale is simply a matter of applying the same rules, but with larger pieces of material. Suppose we have a song with a Verse, Chorus and Bridge. We assign letters so that A = Verse, B = Chorus, and C = Bridge.

Applying an ABCC form we get Verse, Chorus, Bridge, Bridge.

If one desires the sections to appear in a different order, simply assign different letters to each section. If we assign them as follows:

A = Bridge B = Chorus C = Verse

Applying the ABCC pattern would yield Bridge, Chorus, Verse, Verse.

Forms are merely patterns into which material can be inserted. They are reminders of what patterns of organization are available. They are intended to provide the composer with a broad palette of choices than can be applied to individual musical elements, or to complex passages of material.

Putting it All Together

The elements that have been discussed so far are most powerful when used in conjunction with one another. This chapter focuses on how to combine these musical elements effectively.

Combining Contours with Rhythms

Both the contours and the rhythms listed in this handbook are sorted according to number of attacks. This has been done rather deliberately so that they can be used together. To demonstrate how this works, we will choose a contour that has three attacks, and combine it with a rhythm that has three attacks.

This contour...



Combined with the following rhythm...



Yields...



Next we will combine a contour that has two attacks with a rhythm that has two attacks.





Combined with the following rhythm...







Combining Contours With Pitches

In the chapter on Contours, we mentioned that even though they are written using a C Major triad, there is no reason they can't be used with any other chords or scales. We will choose a chord from our chapter on pitch, then apply a contour to it.

First select a contour...



Next, select a chord...



The result...



We can also use the same contour, but invert the chord beforehand.

The chord inverted becomes...



We apply the same contour as before...



The result is...



As discussed in the chapter on pitch, the chords given are in only one transposition and one inversion. Therefore the right transposition and inversion must be chosen before using them. This is at the discretion of the composer but typically will be governed by the key and the musical context.

Although in the above examples the contour had three pitches and the chord had three pitches, this is not mandatory. It is OK for the contour to have more pitches than the chord. It is also OK for the contour to have less pitches than the chord. If the contour has

fewer pitches than the chord, it can simply not use some of the pitches. That is shown here.

Choose a contour...



Apply to the following chord, using only some of the notes...



The result...



If a contour has more pitches than the chord, then the notes of the chord can continue an octave higher. The following contour has four pitches...



We apply it to the same chord as above, repeating one of the notes at the octave...



The result...



Combining Pitch, Contour, and Rhythm

Combining all three elements together is not much different than what has been demonstrated already. It is important to remember that the number of attacks in the contour and rhythm should match, while the number of notes in the chord is fairly arbitrary. We will combine a contour with three attacks, a rhythm with three attacks, and a chord containing two pitches. We start with the following contour...



We choose a chord...



We choose a rhythm...



Then we apply the rhythm and the contour to above notes...



Conclusion

The techniques presented in this book are powerful and modular. When used in concert with one another, they provide a powerful foundation for musical exploration. Because each chapter focused on only one facet of music isolating small, generic bits of material, there is an endless number of ways these pieces can be combined. Continually revisiting the information here will yield musical growth for years to come.

For additional resources to help you further your musical exploration, please visit:

http://ultramusician.com

For additional information about the author, please visit:

http://davidmanncomposer.com