

PROJECT 2.3

COMPOSING PERCUSSION ACCOMPANIMENTS FOR TUNES

In the Introduction to Part II, it was suggested that once a metric hierarchy is established, it creates expectations for continuation. Indeed, it is only when the metric framework is established by the events in a composition, that deviations from it can be surprising. This is another example of making complexity by elaborating and confounding what we take to be "norms."

For example, listen again to the melody, "Ode to Joy," from Beethoven's 9th Symphony. Listen closely to the moment when the opening tune returns after the contrasting passage in the B section. Having solidly established the metric framework, Beethoven animates this "joint" between the middle section and the return by deviating from what he has led us to expect. Beethoven anticipates the moment of return, arriving at an accent just ahead of when we expect it. In turn, the expected accent comes after the return has already begun. Breaking the mold gives a fresh start to the return of familiar material.

Going on to Variation 1 (Example 1.2) the rhythm of the bassoon's solo melody is in friendly competition with the metric structure of the Theme played by the violas. Specifically, there is often a stress on normally unaccented or weak beats. This kind of conflict, where accents occur on unaccented beats and where expected accents are anticipated or delayed, is called syncopation. Go back and listen to the Theme and the three variations to get a feel for how Beethoven develops rhythmic conflict and complexity.

THE TASKS

There are four tasks for Project 2.3 each of which involves making your own percussion accompaniments to tunes. The three tunes you will be working with are:

EARLY LANNER TYROL

For **each of the tunes**, do the following four tasks:

TASK 1: Make a percussion accompaniment that plays the metric hierarchy generated by the tune.

TASK 2: Compose a percussion accompaniment using varied durations (in contrast to steady beats). This accompaniment should reinforce the metric hierarchy found in Task 1.

TASK 3: Compose a percussion accompaniment that includes conflict with the metric hierarchy found in Task 1.

TASK 4: Write out the rhythm of each tune in Impromptu number notation and translate that into CRN.

Practice Session: Task 1

The Metric Hierarchy As Accompaniment

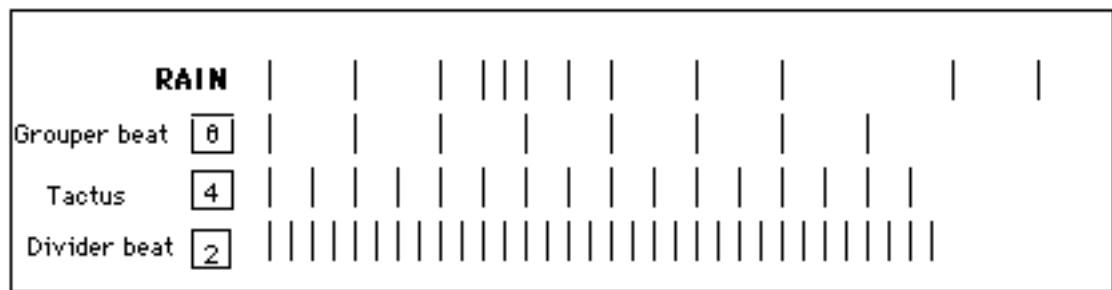


Building the metric hierarchy as an accompaniment for a tune is primarily preparation for composing more interesting accompaniments--you need to know the metric structure of a tune in order to build an accompaniment that reinforces it. Similarly, to compose conflicting accompaniments you will need to know what your rhythm patterns are conflicting with. Building up the metric hierarchy using percussion instruments should be

quite straightforward since you are already familiar with the general procedure from Project 2.1. We will use the tune, *Rainbow*, as an example. Follow these steps:

- Drag the tuneblock, RAIN, into Voice 1. As you listen to it, clap the tactus beat.
- Listen again and count the number of tactus beats you clap.
- Put that number in the Repeat Box.
- Experiment with drumblocks in VOICE 3 until you find one that matches your clapped tactus beat.¹
- Listen for and clap a slower beat (grouper beat). Experiment with drumblocks in Voice 2 until you find one that matches the beat you just clapped. Put in an appropriate number of repetitions for Voice 2.
- To complete the metric hierarchy, clap a faster beat (divider beat), put a drumblock in Voice 4 that matches it, and add an appropriate number in the Repeat box.

A hierarchy for the beginning of RAIN is shown below:²



RAINBOW: Metric hierarchy

Following the general procedure described above, go on to build up the metric hierarchies for Early, Lanner and Tyrol. Tyrol is particularly interesting: students often disagree on its meter and sometimes they hear the meter shifting.

¹Keep in mind that the duration values used in programming the tune determine the duration value of the tactus. For instance, in programming RAIN, 4 was chosen as the tactus, so the drumblock that matches your clapping is also a 4-block.

² Of course, you may have selected a different value for the tactus (e.g., 8) but the proportions among the levels should still be those that create a duple meter structure like this one.

Transcribing the rhythm of the tunes

When you have finished building up the metric hierarchy for each tune, translate the rhythm bar graphics for the melodies into Impromptu number notation. With the metric hierarchy for Rainbow still in the playroom, we will use it as an example of the procedure. Follow these steps:

1. Listen to the melody, and while clapping the tactus, focus on the rhythm (the varied durations) of the melody.
2. Listen again and this time tap the tactus with one hand and the rhythm of the tune with the other.
3. Using the tactus beat (4) in Voice 3 as unit of measure and following the space-for-time graphics, estimate the varied durations of the melody.

RAIN		8		8		4		2		2		4		4	
4															

Duration of tune events

4. To test your guess, build up the rhythm using a percussion instrument.
 - a. In the Edit Menu, select Improvise--->Rhythm.
 - b. Type your estimated durations for the melody into the Duration box in the Improvise window.
 - c. Click on the Play button in the Improvise window to listen to your rhythm.

Block: 	Name: <input style="width: 150px;" type="text"/>	Name->Icon	Type-it: <input style="width: 40px;" type="text"/>
Repeat: <input style="width: 40px;" type="text"/>			
D: <input style="width: 300px;" type="text" value="8 8 4 2 2 4 4"/>		<input type="button" value="Clear"/> <input type="button" value="New"/>	<input type="button" value="Play"/> <input type="button" value="Save"/>
		<input type="button" value="Done"/>	

The Improvise Window

- d. When you have finished (or when you have a good start), click on NEW to make a new block in the Blocks area.
- e. Drag your new block into Voice 2 and listen to your rhythm with the rhythm of RAIN in Voice 1.
[You can do that without closing the Improvise Window]
- f. When Impromptu numbers match the rhythm of RAIN, translate the Impromptu numbers into conventional rhythm notation (see Project 2.2 for help on that).
- g. Write out both the Impromptu numbers and CRN in your log book.

TASK 2

Composing Accompaniment Patterns That Reinforce the Metric

You have already listened to several examples of accompaniments that reinforce the metric hierarchy of a piece. For instance, Sousa, in his "Stars and Stripes" (Example 2.4) composes an accompaniment that clearly supports and reinforces the duple meter hierarchy of the melody. And Lanner's melody in his Styrian Dance (Example 2.5), is carried along by the supporting triple meter, oom pah pah, accompaniment played by the lower strings. Listen again to these two examples. Going back to the Haydn Minuet (Example 1.2), listen to how Haydn helps to create the closing passage of the A section with its feeling of stability, by introducing a clear melody and accompaniment. The accompaniment, again the triple meter oom pah pah, strongly supports the meter of the melody.

For Task 2, your accompaniments can be modeled after the rhythm figures such as those you heard in the listening examples. These rhythm figures or patterns are usually made up of varied durations in contrast to the steady beats you have been working with so

far. The patterns you compose for each tune should reinforce the metric hierarchy that you made in Task 1. (See Explorations 2 for more on rhythm figures.)

For instance, if you found that the meter of a tune was duple, you will want to make patterns of varied durations that also generate duple meter. And if you found that the value of the tactus was 4, you might try patterns that include multiples or divisions of 4 as a first experiment. While this kind of calculation is useful to begin with, the interesting work comes in listening back to what you have made and then playing with it more intuitively. And in making modifications as you go along, surprises will again be moments for potential innovation.

To begin your experiments, select the name of the tune you want to work with in the Catalog and follow these steps:

- Drag the tuneblock (Early, Lanner, or Tyrol) into Voice 1 and listen to it. (It may be more convenient to start with just the FirstPart (FP) of the tune) Try first to improvise (clapping or drumming) some accompaniment figures that seem to "fit" with the tune. Short, repeated figures are the easiest to remember and to work with.
- Using what you already know about the metric structure of the tune, jot down your best guess at the durations of the accompaniment figure you have improvised.
- Experimenting with drumblocks, try to match the figure you clapped.

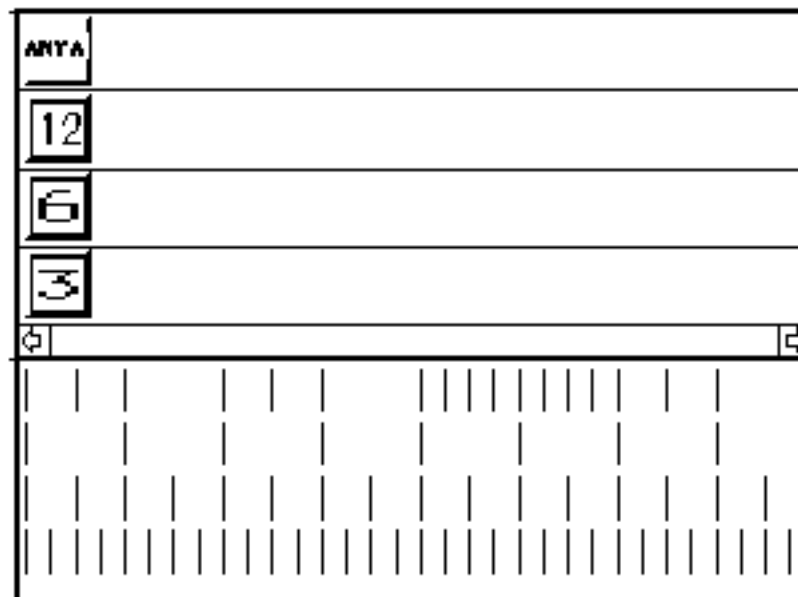
Listen closely to your experiments. What you hear may yield discoveries that are more interesting than patterns you plan or that you have clapped. Go on to experiment with figures for the other percussion instruments that will enhance the first one you made. Keep in mind that your choice of percussion instruments in each voice can make a big difference in the effect of your accompaniments. Also, be sure to keep track in your log of what you try, what works and what doesn't, and also try to account for the success of the accompaniments you like best .

For help, go through the Practice Session for Task 2, given below.

A Practice Session For Task 2

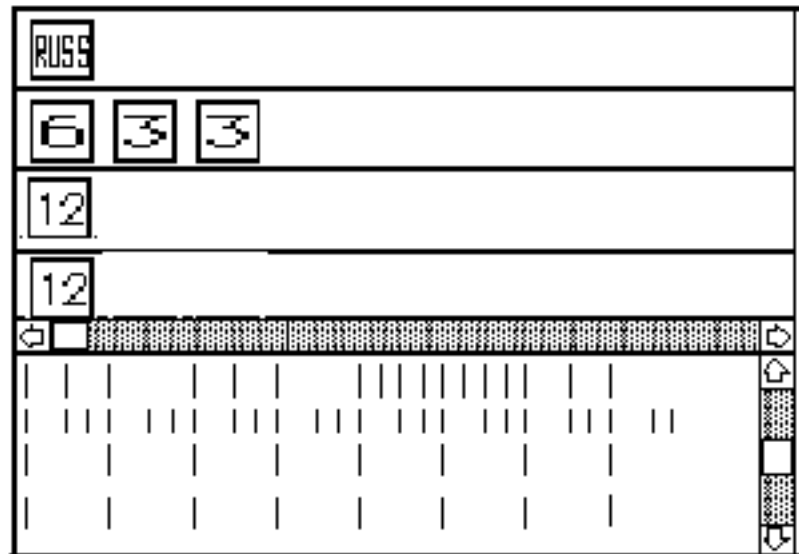
We will use the tune, Russian, to illustrate rhythm patterns that reinforce the metric hierarchy as well as patterns that conflict. In the Catalog, double click on the block labeled, RUSS. Listen to the melody, Russian, by itself. Did you notice that the rhythm is the same as for Anya and for Hot Cross Buns? Listen for the difference in effect created by the difference in pitch relations.

To establish the framework, recall the metric hierarchy for Anya: the meter is duple-- the tactus a 6-block, the grouper beat a 12-block, and the divider beat a 3-block. Build the metric hierarchy as an accompaniment and listen to it.



Anya/Russian: Metric hierarchy

Now, select RUSS.FIT in the Catalog. This is an example of an accompaniment with a pattern of varied durations that reinforces the metric hierarchy. Why does the accompaniment reinforce the meter of Russ?

**RUSSIAN Fit**

The 12-blocks in Voices 3 and 4 obviously mark the grouper beat or "measure." And, as the graphics show, it is clear that the repeated drum pattern in Voice 2 [6 3 3] also has a total time-span of 12 which matches the duration of the grouper beat. Moreover, the faster durations in the accompaniment pattern [3 3] coincide with the divider beat. The accompaniment is clearly "in sync" with the metric hierarchy--it fits.

But what about the effect? Listening back to the accompaniment, the faster durations in Voice 2 provide a bit of motion during the longer durations of the rather dragging melody, but the plodding beat in Voices 3 and 4 don't contribute much. How can we make this dull beat more interesting?. We could compose a more varied accompaniment in Voice 3 or Voice 4, but there are other possibilities to explore, as well. These are discussed in Explorations 1.

**** EXPLORATIONS 1 ****

Delayed Entrances

In the examples so far, all the instruments have come in together at the beginning of the tune. What if these entrances could be staggered? For instance, what if the 12-beat

in Voice 3 were to come in after the other instruments? But how much after? If composers want performers to come in at the right moment after the piece begins, they must tell a player how many beats to count before coming in. So players in a real orchestra who don't start playing right at the beginning of a piece, must count beats from the start so they will know when to come in. In the same way, you must tell the instrument in Voice 3 exactly how long to wait before coming in.

Let's say we want the instrument in Voice 3 to wait for one beat before coming in-- that is the drummer should begin playing only on the second beat of the tune. Since the tactus beat that you count on, has a value of 6, the Impromptu drummer should begin playing after a "rest" of duration-6. This can be done with a new tool called WAIT TIMES found in the Option Menu:³

- In the OPTIONS menu, select WAIT TIMES
- Type 6 in Voice 3. [This inserts a rest of duration-6 at the beginning of Voice 3.]

Select Wait Time for Each Voice

Voice 1:

Voice 2:

Voice 3: ←

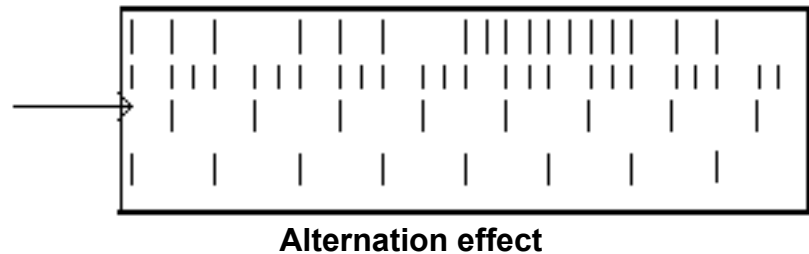
Voice 4:

Inserting a rest of duration 6

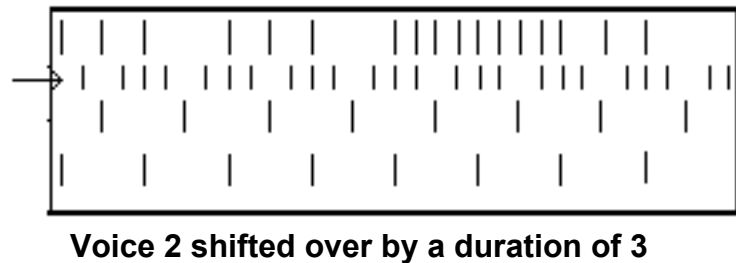
- Click on OK, then on PLAY, and listen.

³**NOTE:** Inserting a rest in the percussion accompaniment is particularly useful when the tune, itself, begins before the first downbeat. This is called beginning with an upbeat or pick-up. Keep this in mind as you work on Task 2.

Can you hear the difference? Inserting a rest of duration-6 in Voice 3 has the effect of sliding the 12-block one beat over. The result is to create an alternation effect between Voices 3 and 4.



Now try sliding over the pattern in Voice 2 by inserting a rest of duration-3. In the Options Menu, select WAIT TIMES and type a 3 in Voice 2.



This makes the accompaniment a bit more interesting. Why? Turn off Voices 3 and 4. Notice that as the repeated pattern in Voice 2 goes along, its intersections with the melody occur at different places. Does this influence the way you hear the melody, as well? For instance, notice how the accent in the melody seems to shift creating a bit of syncopation. Changing the instrumentation for the melody can also influence the effect. Try the xylophone or the kalimba for the melody if you have them on your synth.

These are the kinds of experiments you should make in composing your accompaniments. In fact, if we had saved each of these examples, we would have a little Theme and Variations. And if we also switched between Anya, Hot Cross Buns, and Russian, all of which have the same rhythm, we would have a large set of variations.

RUSSIAN.FIT1, RUSSIAN.FIT2, and RUSSIAN.FIT3 are other examples of accompaniments that match the metric hierarchy of RUSS. To try them, select them in the Catalog. If you are using MIDI, try the following percussion instruments:

Voice 2: Castenets

Voice 3: Bongo1

Voice 4: Cowbell

Notice that RUSS.FIT1 is more lively than RUSS.FIT2. In fact the accompaniment in RUSS.FIT1 verges on creating conflict with the metric hierarchy of Russian. To hear what is generating this potential conflict, try turning off Voice 4. Then turn off Voice 2 and listen to the tune with only Voice 3 as accompaniment. Play with turning voices off and on and experiment with percussion instruments to make the differences sharper. Look at the graphics and duration patterns, can you hear what is happening? Think about this example when you listen to Stravinsky's accompaniment to Lanner's waltz in the next group of listening examples. Why does RUSSIAN.FIT2 generate less conflict? RUSS.FIT3 is a variation on RUSS.FIT2.

Using these accompaniments for Russian as examples, go on to build accompaniment patterns that reinforce the hierarchies for Rainbow, Lanner, and Tyrol. As you work, pay attention to the following and jot down your thoughts in your log:

- Strategies you used in designing and implementing your accompaniment.
- Experiments made and surprises encountered: what you expected, what you got, an accounting of the differences, and how you used these surprises.
- A description of the structure of your completed accompaniment--e.g., how it reinforces the metric hierarchy of the tune; how it influences your "hearing" of the tune; what you like about it.

When you have finished composing your accompaniments, remember to write out the rhythm of each tune in Impromptu drum block notation and in CRN.

SAVING YOUR WORK

Be sure to SAVE each tune and your accompaniments so they can be played for others

To Save your work on a floppy (to be turned in with your paper), follow these steps:

1. Insert your own floppy.
2. In the File menu, select SAVE AS
3. Select Desktop and double click on your floppy icon.
4. Delete "#0" and type in your name.
6. Click on SAVE.
7. Remove your floppy by dragging the floppy icon into the trash.

RHYTHMIC COMPLEXITY

Listening Examples

Examples 2.5: Lanner, Styrian Dances	1840
Example 2.6: Stravinsky, <i>Petrouchka</i> (excerpt)	1911
Example 2.7: Mozart, Concerto for Piano, K. 467	1785
Example 2.8: <i>En La Cueva</i> , Flamenco	
Example 2.9: C. Porter <i>Night and Day</i> (Billie Holiday)	1937

In preparation for composing more complex percussion accompaniments that conflict with the metric hierarchies of tunes, it will be helpful to listen to some musical examples in which the accompaniment conflicts rhythmically with the melody. The examples are again drawn from different musical cultures and from different time periods, so it is not surprising that rhythmic conflict is created through different means and thus with different effect. However, Examples 2.5, 2.6, and 2.8 all share an important commonality—they are all dance music. Indeed, even the jazz example, Cole Porter's *Night and Day*, might be associated with dancing. What, then, are the musical means that make each example different from the others?

Before listening to Example 2.6, the first example of rhythmic conflict, listen again to Lanner's waltz (Example 2.5). Recall that the Lanner dance, like all waltzes, marks a triple meter which is clearly reinforced by the oom-pah-pah accompaniment.

Example 2.6: Stravinsky, *Petrouchka* (excerpt) 1911

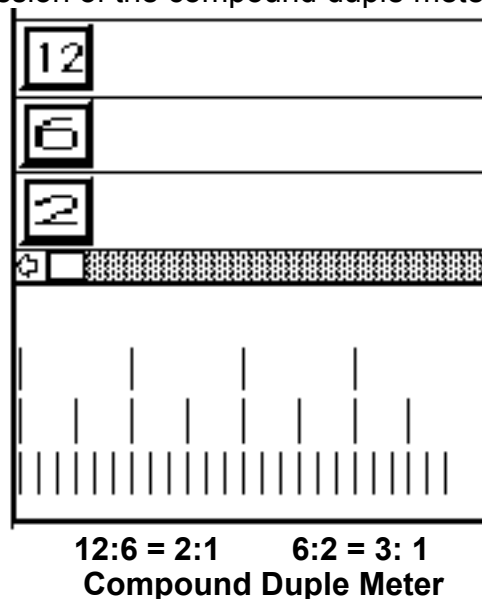
Listening now to Example 2.6, an excerpt from Stravinsky's music for the ballet, *Petrouchka*, you will immediately hear that Stravinsky has borrowed his melody from

Lanner's Dance. But it is just as obvious that Stravinsky is playing games with Lanner's melody. Composing music for a ballet about a circus and a clown named Pertruchka, Stravinsky takes Lanner's Viennese cafe music and turns it into merry-go-round music. How does he do that?

Stravinsky's use of instrumentation is clearly an important factor. Listening again to both pieces, you will hear that the Lanner waltz is played by a string orchestra (violins, violas, cellos, basses) with the violins playing the melody. Stravinsky ingeniously orchestrates his music to imitate the music box sound of the merry-go-round. He gives the accompaniment to the bassoon in the lower register while the trumpet plays Lanner's melody.

But it is Stravinsky's accompaniment that introduces imaginative rhythmic conflict against Lanner's melody. Listen once more to both examples, this time paying particular attention to the two accompaniment figures. Lanner's accompaniment, played by the lower strings, is the typical triple meter, oom-pah-pah figure that almost defines the waltz as itself. In contrast and in conflict with Lanner's triple meter melody, Stravinsky's bassoon figure organizes itself into compound duple meter.

Recall the previous discussion of the compound duple meter hierarchy (see page):



In that example, the mid-level beat (6-beat) is grouped in twos by the grouper beat at the top-level(12-beat). But the mid-level beat is divided into threes (2-beat). This configuration of relationships is called "compound duple" meter because of the mix of metric groupings.

Figure X shows you in CRN, a comparison between the triple meter hierarchy of Lanner's accompaniment and the compound duple meter hierarchy of Stravinsky's accompaniment. Notice that either of the accompaniments can work because the rate of beats at the top and bottom levels of the hierarchy are the same. . Thus it is at the mid-level that the differences between them occurs.

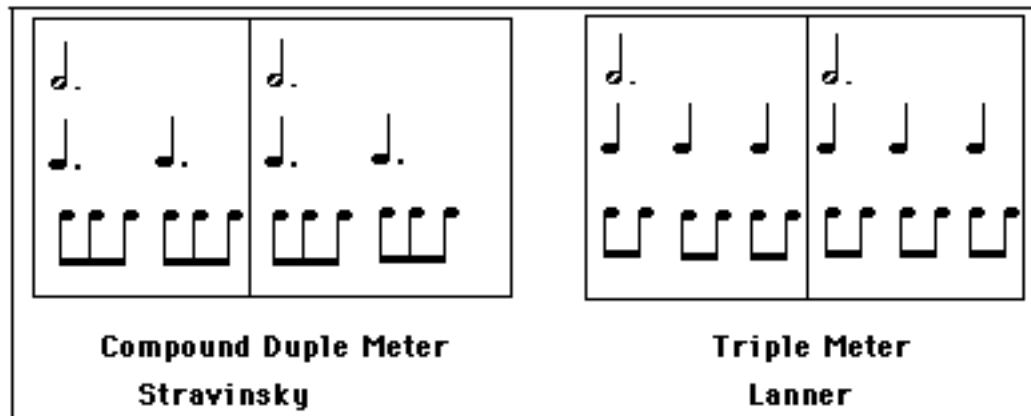
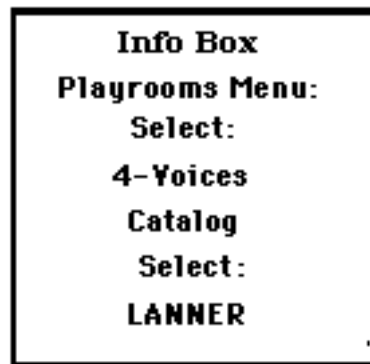


Figure X

EXPLORATIONS

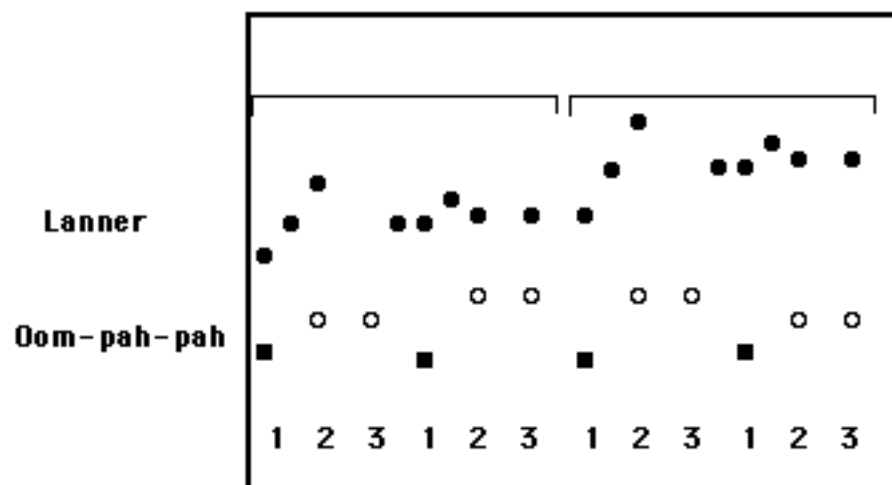
Mixing Meters

To help you hear the games Stravinsky is playing, select **4-Voices** in the Impromptu Projects Menu, and open up the file, **Stravinsky**, in the Catalog.



To begin, just click on PLAY and listen to a synthesized version of the Lanner melody with a triple meter, waltz accompaniment (oom-pah-pah--the oom is in voice 3, the pah pah in voice 2). Tap the grouper beat while you count and tap the tactus beats.

Lanner's Original Version: Triple Meter

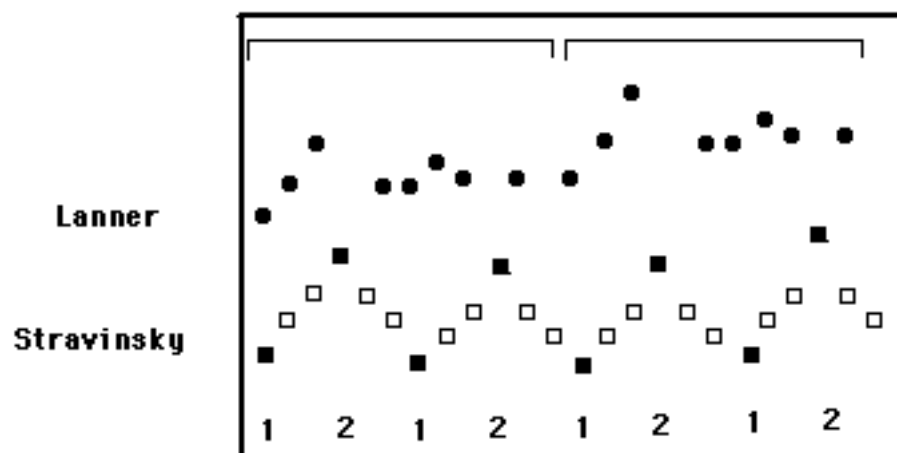


Impromptu Notation
Metric Counting



Conventional Rhythm Notation
Metric Counting

Now turn off the waltz accompaniment (Voices 2 & 3) and drag the Stravinsky accompaniment block (STRAV) into Voice 4. The accents generated by Stravinsky's accompaniment are shown as black boxes in the graphics.

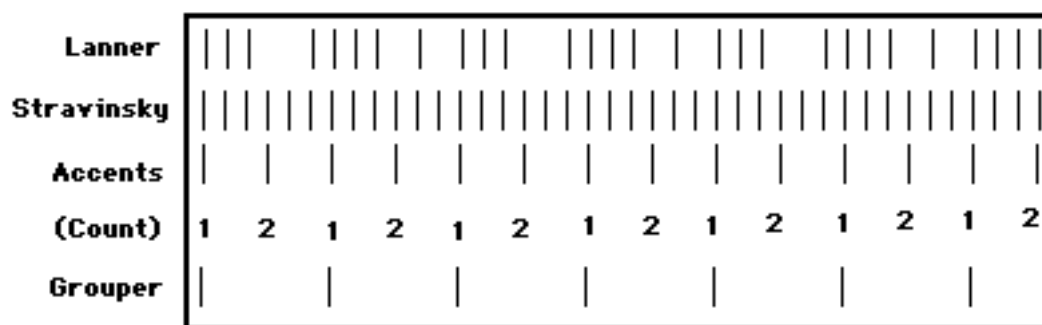


**Stravinsky's Version: Compound Duple Meter
Metric Counting**

Turn off Voice 1 (Lanner's melody) and listen just to Stravinsky's accompaniment. As you listen, clap all the notes of the accompaniment with one hand, and with the other clap just the accented notes. Notice that it is the shape of the accompaniment figure that creates these accents. Since all the notes are of equal duration, the accents are generated when the pitch contour reverses direction--i.e., on the highest and lowest pitches. Try clapping again and this time count the meter as shown in the graphics.

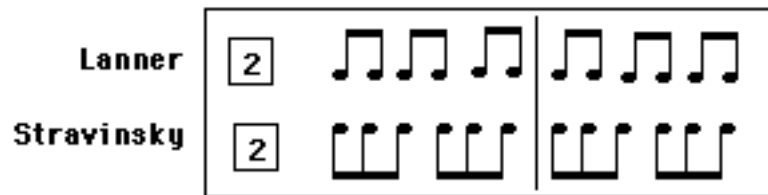
Turn Voice 1 back on and listen again to Lanner's melody along with Stravinsky's compound duple meter accompaniment.

Stravinsky's Accompaniment: Compound Duple Meter ____



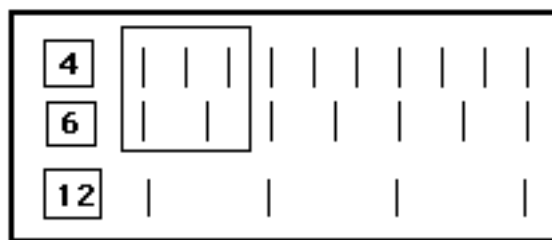
For a more lively version of this shift, listen to MIX1 which was made by a professional drummer.

Coming back to the initial comparison between Lanner and Stravinsky and back to the 4-Voices Playroom, it should be clear, now, that both accompaniments work because they share the same slowest beat and the same fastest beat, despite the differences in grouping and accents.



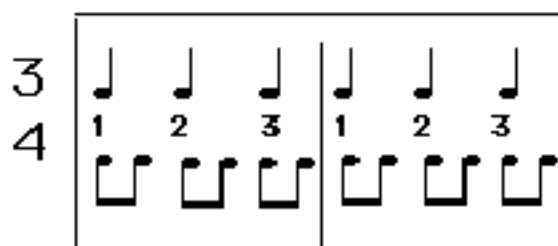
Differences in grouping and accents

It should also be clear that the conflict between the two accompaniments occurs at the mid-level of their hierarchies: Lanner's mid-level beat (4-block) and Stravinsky's mid-level beat (6-block) create a conflict: 3 beats against 2 beats, but both sharing the same grouper beat and thus fitting into the same measure (12-block).

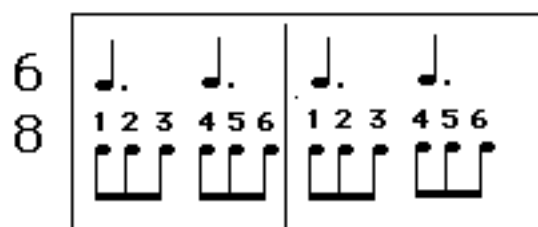


A conflict of 3 against 2

Finally, just to make for greater confusion, the conventional representation of triple meter and compound duple meter differ with respect to the level of the hierarchy that is symbolically used to represent the tactus.



Triple Meter
3 groups of 2



Compound Duple Meter
2 groups of 3

Triple meter(waltz) is notated as 3/4--where 3 stands for the three beats per measure (the beat you "count on"), and 4 stands for the "quarter note" as the symbol representing that beat. In contrast, compound duple meter is notated as 6/8. Here, the divider is treated as the beat you "count on." Thus, the 6 in 6/8 stands for the six faster beats per measure and the 8 stands for the "eighth note" as the symbol representing that faster beat. The difference in the symbolic representation blurs the fact that both 3/4 meter and 6/8 meter include the same, 6 faster beats per measure even though they are grouped differently: 3/4 is made up of 3 groups of two faster beats (3 X 2); 6/8 is made up of two groups of three faster beats (2 X 3).

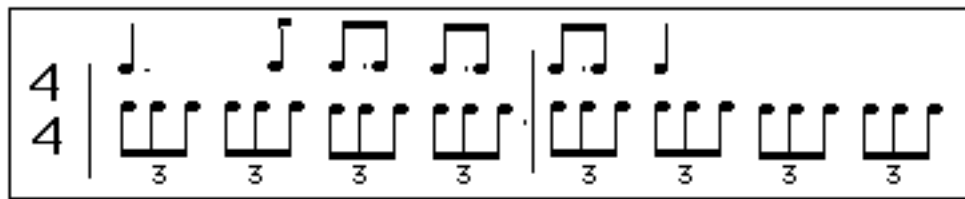
We started these explorations with a question: How does Stravinsky take Lanner's Viennese cafe music and turn it into merry-go-round, circus music? Go back, now, and listen to the two pieces as their composers intended them to be played. Have the explorations helped you to hear the answer to that question?

<p>Compound Duple Meter Stravinsky</p>	<p>Triple Meter Lanner</p>
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Example 2.7: Mozart, Concerto for Piano, K. 467

This is an excerpt from the slow movement of one of the many concertos Mozart wrote for a solo instrument and orchestra--in this case, piano and orchestra. In it, Mozart puts "two against three" but creates quite a different effect from Stravinsky. Much of the difference derives from the level of the hierarchy at which the metric mix appears. Indeed, where the conflict occurs in moving up and down the metric ladder makes a significant difference in the intensity of conflict. In this example, Mozart is making the two against three mix at the lowest level of the hierarchy--the divider beat. Listen!

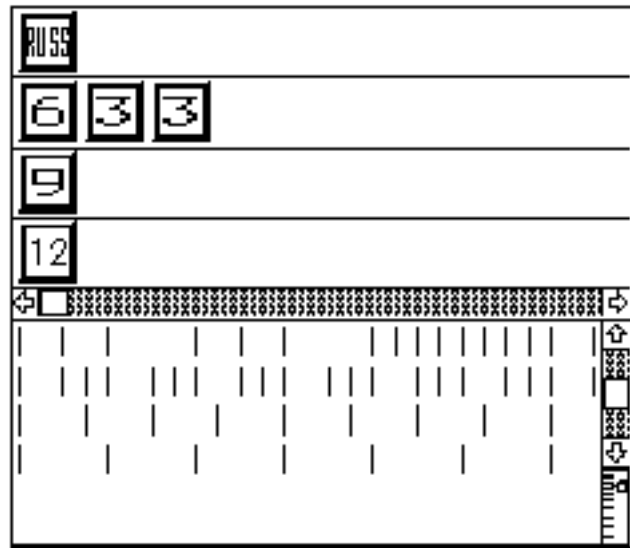
The excerpt begins after an orchestral introduction, as the piano soloist enters. You will hear that the meter is duple (4/4) with the tactus beat divided into three's by the accompaniment figure. The piano, moving slowly above it, divides the tactus beat in twos. The effect is a beautiful melody which seems to float or hover above its accompaniment.



The melody hovers above the accompaniment

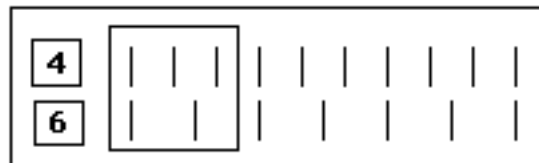
Revisiting Impromptu

From the sublime to the banal, go back to RUSSIAN.FIT1 in the Drummer Project and compare it with these musical examples of metric mix.

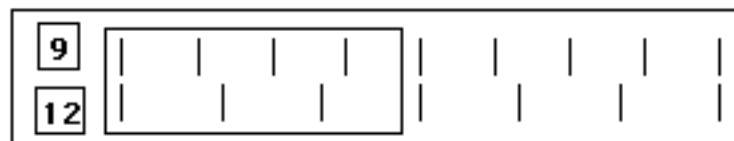


RUSSIAN.FIT1

Focusing on the accompaniment in Voices 3 and 4, what are the similarities and differences between the 9-block and 12-blocks in RUSSIAN.FIT 1, Stravinsky's accompaniment to Lanner's waltz, and Mozart's accompaniment to the piano melody?



Lanner/Stravinsky



RUSSIAN.FIT 1

Example 2.8: *En La Cueva* , Flamenco

Example 2.8, like Stravinsky's *Petrouchka*, is music to be danced. But unlike the ballet with its stars, its brilliant choreographers and composers, Flamenco is popular music, played, sung, and danced by the people of Spain. As in this example, It is typically performed by one or more guitar players, along with hand-clapping and heel stomping all of which accompany singing and dancing. Listen to the excerpt straight

through just to enjoy its excitement. Then go back and try to hear what rhythmic characteristics generate the inescapable energy.

The effect is quite different from any of the previous examples. You will notice, for instance, that hand-clapping generates a fast, steady beat accompanying the relatively slow moving melody. But this beat is "attacked" by irregular accents interspersed by both the clapping and by the guitar. Is there a slower beat that groups the fast clapping? Or is this an example of beat without the framing of a slower beat--i.e., without meter?

Example 2.9 C. Porter, *Night and Day*: (Sung by Billie Holiday)

Revisiting Billie Holiday's wonderful performance of Cole Porter's tune, "Night and Day," you will appreciate not only Billie's willowy bending of the beat, always carrying us along on the figural gestures of the melody, but also the remarkable rhythms of the instrumentalists playing with her.

To hear the complexity of these rhythms, you will need to practice "listening through the texture." This means selectively focusing your attention on each instrument or group of instrumentalists, respectively, as they work with and against the basic beat of the rhythm section. As the rhythm section (percussion and bass) play the beat, the brass is often marking the slower, grouper beat. Listen particularly to the piano as Joe Sullivan plays against, in between, and all around the steady beat. He does that in a different, complimentary way to Billie's expressive "give" in shaping the melody rhythm. The two are magically and freely responsive to one another. Perhaps It is only when temporal framing of beat and grouper beat are so alive and so present, that such guileless freedom becomes possible.

It is unlikely that you and the computer can come anywhere near to what these composers and live musicians with their particular genius have made. However, the idea of metric mix and of "syncopation" which is so closely associated with jazz, are ideas that you may be able to learn from and use. Syncopation is pushing, bothering the beat by avoiding events that play on the beat and emphasizing, accenting moments between the

underlying beat and/or the downbeats. In *Night and Day* the piano especially makes these "off-beat" events that, going against beat and meter, make both, in their steadiness, come alive. Listen again to the Flamenco piece for examples of syncopation of another sort. With these examples in mind and ear, go on, now, to Task 3--composing percussion accompaniments that conflict with the metric hierarchy of tunes.

Task 3

Accompaniments That Conflict

The trick in working on Task 3 is to make an accompaniment that conflicts with the metric hierarchy generated by a tune, but one that is still coherent! This means, for instance, that just some random, arbitrary durations will not do. The puzzle becomes: How do you create rhythmic conflict without creating chaos?

The pieces you have just listened to are good examples. They illustrate, for instance, how you can generate conflict at different levels of the metric hierarchy--at the grouper beat level (Stravinsky/Lanner), at the beat level (syncopation--Night and Day), or at the division of the beat level (Mozart). Which level you choose can make a big difference in the intensity of conflict that you feel.

Experimenting with Rhythmic Conflict

Again, we will use RUSSIAN as an example. Select RUSSIAN.CON1 in the Catalog. When loaded, click on PLAY and listen closely. What relationships in the accompaniment are generating conflict with the metric structure of Russian? To explore that question, here are some general possibilities.

- Listen to each voice separately and then in various combinations.
- Substitute some different durations and listen to the difference.
- Experiment with the Wait Time.
- Experiment with tempo and with instrumentation.

Using RUSSIAN.CON1 as an example of rhythmic conflict, try some experiments. Consider the questions asked, jot down your impressions and try to explain what changes

make significant differences. As you work, keep in mind the metric hierarchy you initially built for Russian.

- Listen just to the melody and Voice 4--that is, turn off Voices 2 and 3.

Do you hear any conflict?

How does the 18-beat relate to the regular grouper beat of 12? For instance, when and where does the 18-beat coincide with events in the tune?

What does this suggest about the metric level at which conflict is being generated?

- To test, trash the 18 block and substitute a 12-block.

Does the conflict disappear? If so, why?

- Turn Voice 2 back on.

Does this increase or decrease the conflict? Why?

- Trash the 12 block and put the 18 block back in Voice 4.

Why does this reduce conflict? Or does it?

Notice the proportional relations between [6 3] in Voice 2 and [18] in Voice 4.

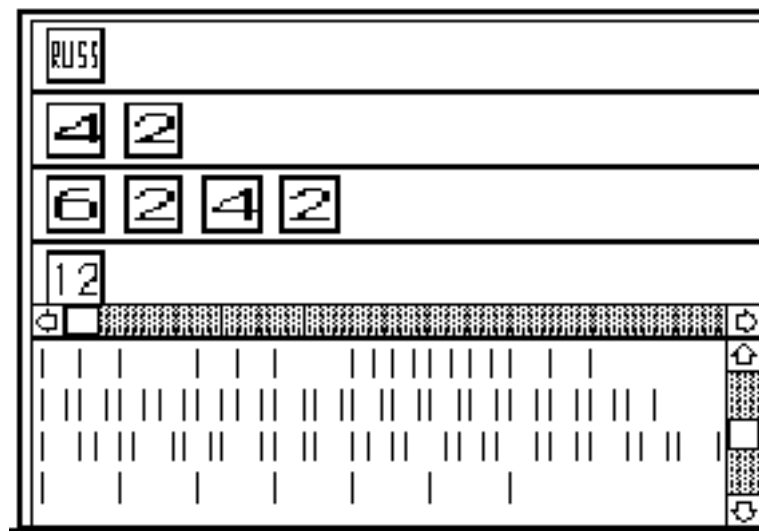
- Turn Voice 3 back on. Can you predict how this will change the effect of conflict?
- Other things to try:

Play with Wait Times in Voice 1 and then other voices.

Put the 12-block back in Voice 4.

Play with tempo and instrumentation.

For other examples of conflicting accompaniments, select RUSSIAN.CON2 and RUSSIAN.CON3 in the Catalog. For RUSSIAN.CON2, try castenets in Voice 2 if you have it on your synth. Notice that the shorter durations in Voice 2 [4 2] seem to conflict with the normal divider beat [3]. How does conflict at this level compare with conflict at the tactus or grouper beat levels?



RUSSIAN.CON2

Compare RUSSIAN.CON2 with RUSSIAN.CON3. (Try woodblock in Voice 3 for a better effect.) What generates the differences between RUSSIAN.CON2 and RUSSIAN.CON3 especially with respect to intensity of conflict?

Go on now to compose your own percussion accompaniments for Early, Lanner, and Tyrol. Remember that these accompaniments should generate conflict with the metric structures of the tunes but they must still be coherent. Indeed, big questions to think about are these:

- What do we mean by "coherence?"
- What creates coherence in the midst of conflict?
- What relations are necessary to create a sense of organized structure and when do accompaniments slide into chaos?

EXPLORATIONS 2

Figural Grouping Boundaries

In the Introduction to PART II, two questions were raised:

- What kinds of temporal relations generate the boundaries of rhythm figures?
- How do rhythm figures differ from and also relate to metric units?

The experiments that follow will help you explore these two questions.

Generating boundaries

- Clear Voices
- Put drum blocks, 3 3 6, in Voice 2
- Repeat this figure 3 times.
- Before you click on PLAY, clap the pattern you expect to hear.
- Click on PLAY

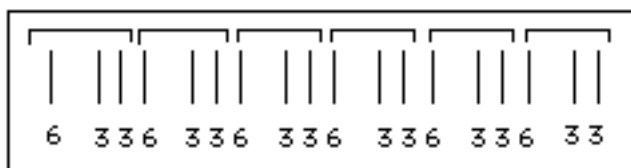
The repeated figure that you heard, short-short-long, probably matched what you



But sometimes perceived figures surprisingly differ from what you would expect. For example, try the following experiment:

- Clear Voices
- Put blocks 6 3 3 in Voice 2.
- Repeat this figure 6 times.
- Before you click on PLAY, clap the repeated figure you expect to hear.
- Now click on PLAY.

Did you hear what you expected to hear? Did your "hearing" match the pattern you clapped? Did your "hearing" match the repeated pattern represented by the numbers, [6 3 3]--i.e., long-short-short?



groupings predicted by numbers

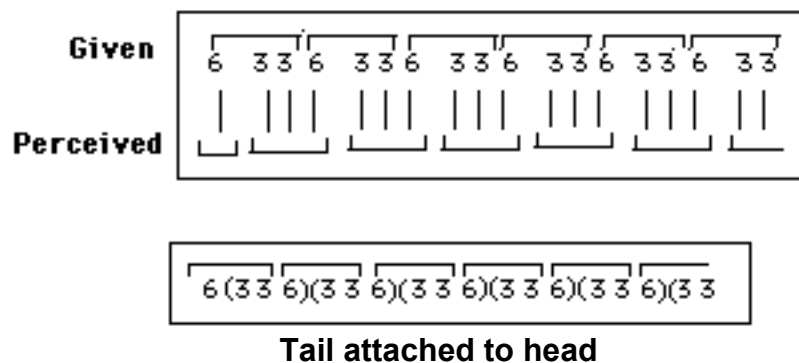
Or did you hear the groupings as shown below--i.e., short-short-long?



perceived groupings?

You may have heard either [6 3 3] or [3 3 6] as the repeated pattern, but people most often hear the second option. That is, instead of groupings of [6 3 3] as the numbers would suggest, they hear groupings of [3 3 6]--the same as in the previous example!. But how can this be?

The difference between the number pattern that the computer was "told" to execute and the figures we actually hear, is good evidence that our hearings are, in fact, constructed. But what generates these perceived figures? What are the internalized "rules" that guide the particular constructions we seem intuitively to make? Recall the previous example: repetitions of the durations 3 3 6 generated no surprises; you heard repetitions of the pattern, [3 3 6]. Notice that the shorter 3's go to the longer 6's. The longer duration, 6, in turn, generates a boundary "bundling up" the shorter durations to form the repeated figure, [3 3 6]. Similarly, in the second example, where we used the number pattern, 6 3 3, we also can hear the shorter 3's going to the longer 6's. As a result the given pattern of durations, [6 3 3], may create a kind of "wrap around" effect: the "tail" of the given pattern, (3 3), attaches itself to the "head" (6) of its next repetition. We hear a solitary first sound (a 6-block) followed by repetitions of the [3 3 6] figure, with the final [3 3] sounding like it ends "up in the air."



If this is what you hear, as many listeners do, your internal mental organizers re-group the number patterns, shaping your hearing on the principle that shorts attach themselves to longs, and the longs generate boundaries. Given no other features (e.g., pitch) this is a commonly shared "mental rule" that guides the way we group individual temporal events

to form larger events or figures. And, interestingly, the visual grouping of lines that we see in the spatial analog graphics (rhythm bars), corresponds with what we hear as temporal groupings: just as a longer time between events forms heard boundaries, so larger spaces between lines form visual boundaries, too.



Visual grouping boundaries

Go on to Project 2.4, Drummer Playgrounds, where you will find new ways to make use of what you have learned so far.