1. Introduction meter and the grid notation

All listeners have an intuitive sense that pieces can be distinguished from one another by referring to what is informally known as the “beat”. While this can mean various things, is often referred to is what musicians would indicate by a time signature—the pattern of strong and weak locations to which the notes of the piece correspond.

For example, we understand that common time (2/4 and 4/4) requires that the strong and weak positions alternate. Pieces making use of this underlying binary pattern are more naturally expressed in these time signatures. Others are heard as requiring ternary pattern: a strong first beat followed by two relatively weaker positions indicated generally by our 3/4 time signature. Then there are the so-called “compound meters” (6/8 and 6/4, 12/8 etc.) which mix binary and ternary. Finally, there are so called “odd” meters” such as 7/4, 5/8 and 11/8, which alternate binary and ternary groupings.

In this class, we will make use of what is known as the “grid” notation to refer to these underlying patterns. It will be seen in the following examples that this notation naturally expresses the intuitions we take for granted with respect to the beat, or, to use the more technical term, metrical structure:

1.1 common time, simple binary

\[
\begin{array}{c|c|c|c|c|c|c|c}
\hline
& & & & & & & \\
\hline
\times & \times & \times & \times & & & \\
\hline
2/4 & | & | & & & & \\
\end{array}
\]

1.2. triple time

\[
\begin{array}{c|c|c|c|c|c|c|c}
\hline
& & & & & & & \\
\hline
\times & \times & & & & & \\
\hline
3/4 & | & | & & & & \\
\end{array}
\]

The horizontal lines indicate barlines which musicians are accustomed to seeing. It is worth mentioning that barlines are somewhat misleading in that they indicate not the actual location of the strong beat, but rather they are located immediately to this position’s left. Of course, musicians quickly learn to ignore this inconsistency one of several in our system of rhythmic notation, as we shall see.

The dots in 1) and 2) indicate that this pattern continues indefinitely until something in the music is heard which indicates that the “beat” has changed. Furthermore, just as we do not specify what occurs after the grids indicated 1) and 2), these also don’t indicate what occurs before, namely the possibility that melodic line may contain an upbeat or
anacrusis requiring that we initiate the grid prior to the downbeat. Doing so involves representing three more patterns derived from the two simple grids:

1.3 anacrusis in common time

```
  x  x
 x  x  x  x  x  . .
```

2/4 |   |

1.4 anacuses in triple time

a)  
```
  x  x
 x  x  x  x  x  x  . .
```

3/4 |     |

b)  
```
  x  x
 x  x  x  x  . .
```

3/4      |     |

We now move on to compound time signatures which require that we chose which of the two strong beats above a ternary subdivision is relatively strong. This is done by adding a metrical level above the appropriate locations

1.5
```
  x    x
 x    x    x    x
 x    x  x  x  x  x  x  x  . .
```

6/8 |   |

1.6
```
  x    x
 x    x  x  x  x  x  x  x  . .
```

6/4 |   |

While the notation of compound meters requires this third level, the presence of these “higher” metrical levels in simple meters is almost always understood as present.

Thus, for example, the third quarter note location in 4/4 time is generally understood as stronger than its two neighbors, but weaker than the downbeat.
Furthermore, pieces in three four almost always are understood as alternating strong and weak measures:

At this point, you might have noticed that the grids assigned to the 6/8 pattern and 3/4 in 1.3 are identical. This seems misleading since musicians understand these meters to indicate what are in fact two very different rhythmic patterns. In particular, the 3/4 time signature generally indicates a slower tempo such that the distances indicated by the marks on the grid represent longer time intervals. This “slower” tempo makes more likely that a fourth metrical level below those indicated is also heard (though not necessarily present in the form of actual notes!).

Another way of expressing this distinction is in the location of what we refer to as a “tactus”. This is the metrical level which tends to be most prominent in the listener’s and performer’s ear and corresponds to those locations where one would most naturally claps one’s hands or choreograph dance steps. The difference between 6/8 and 3/4 then boils down to where one tends to locate the tactus level. In waltzes, the steps are
choreographed to what appears in the score as the quarter note, thus the tactus should be located at this location:

1.11

```
  x
  x  x
 x x x x x . . . tactus
```

\[ \frac{3}{4} \ | \ | \]

In contrast, scherzos notated in 6/8 are heard (and played) “in two” which implies that the tactus should be located on the second metrical level:

1.12

```
  x
  x  x  tactus
 x x x x x . . .
```

\[ \frac{6}{8} \ | \]

2. Hypermeter and the Mozart A major Violin Sonata K. 310

The metrical levels above that indicated by the barline are referred to as hypermeter. While hypermeter is not shown in the notation, it is almost always understood as present in the music, though where it is to be located can be argued over, often passionately, by performers. This is because many performers understand that what distinguishes compelling performances of works from pedestrian ones is the awareness of a “long line”—the organization of the comparatively long time spans mapped out by successive strong beats on the hypermetrical level. Thus, it is crucial to make a decision, at least intuitively, as to how the “big beats” in a piece are to be organized.

The Mozart A major Sonata is particularly rich in metrical puzzles which the performer is required to sort out. The opening presents one such puzzle almost immediately. The following analysis indicates the hypermeter

2.1

```
  x  x  x  x  x  x  x  x  
 x  x  x  x  x  x  x  x  x  x  
 x  x  x  x  x  x  x  x  x  x  
 x  x  x  x  x  x  x  x  x  x  
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Clearly this analysis doesn’t indicate how we hear this piece. The new phrase beginning in the third measure of the bottom system is represented as initiated with an anacrusis—with the strong beat occurring in the next measure. But, as indicated by the question mark, this is clearly wrong. This new phrase begins on a strong beat and continues to alternate strong and weak measures:

2.2 possible analysis (two strong beats)

This above analysis indicates that there are two successive strong beats, and while this might be the case, another possible hearing indicates that the preceding measure be represented as weak thus creating a ternary group at the hyper metrical level.

2.3 possible analysis (initial ternary group)

While there is no reason to prefer either analysis, the first which indicates successive strong beats implicitly suggests the presence of a weak measure which is removed. As such the passage is heard as a regular sixteen measure phrase but with the final measure
cut out, or elided. These elisions are very common in classical sonata forms such as this and frequently account for metrical irregularities—so called “odd” measure phrase lengths.