2001

Metrical Issues in John Adams's *Short Ride in a Fast Machine*

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From *Indiana Theory Review*
Volume 22, no. 1 (2001, appeared in 2003)

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IT IS HARD TO IMAGINE a musical surface that strikes the listener with more metrical conflict than that of John Adams's *Short Ride in a Fast Machine* (1986). According to the composer, this orchestral fanfare is inspired by the experience of speeding down a highway in a too-fast sports car. As he explained in an interview:

> The image that I had while composing this piece was a ride that I once took in a sport car. A relative of mine had bought a Ferrari, and he asked me late one night to take a ride in it, and we went out onto the highway, and I wished I hadn't [laughs]. It was an absolutely terrifying experience to be in a car driven by somebody who wasn't really a skilled driver.[1]

The result is a piece that is truly *about* rhythmic and metrical conflicts. In its first thirty seconds meter is manipulated in such a way that enough regularity (i.e., periodicity) is present at multiple hierarchical levels to tease the listener into making constant attempts to discover and latch on to a metrical surface, even as that surface changes. The resulting aural sensation reflects that of wrestling to keep control over a powerful machine, as the title suggests.

My analysis is an effort to describe the way (or ways) in which this composition's metrical structure might be perceived (indeed, wrestled with) during performance. I will begin by discussing the issues involved in perceiving meter at the work's opening. This discussion will segue into a survey of the multiple levels of metrical dissonance present in this fanfare's first thirty seconds. I will show that different phenomenological elements work in tandem to blur the perception of the tactus, the (periodic) measure, the hypermeasure, and metrical subdivisions. My discussion will conclude with a brief consideration of a possible "metrical narrative" of this work's opening.

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[1]John Adams, interview by Terry Gross, *Fresh Air*, 16 November 1999. Available online at http://www.npr.org/ramfiles/fa/19991116.fa.ram (accessed 10 November 2002).

It should be mentioned that this analysis is not meant as a demonstration of a single "correct" way to apprehend this work. Indeed, I am not sure that there is even one "likely" way in which an individual might perceive some parts of the metrical structure of this piece. To that end, I will rely upon Andrew Imbrie's notion of the "conservative" and "radical" listeners in my discussion.[2] These terms are used to describe a given listener's approach to metrical perception. As described by Lerdahl and Jackendoff, "In a conservative hearing the listener seeks to retain the previous pattern as long as possible against conflicting new evidence; in a radical hearing he immediately readjusts according to new evidence."[3] Ultimately, much of *Short Ride*'s metrical structure depends upon the perceptual slant of the listener, whether radical or conservative.

* * *

The music of this work's opening is presented as example 1. The fanfare begins with a solo wood block that establishes a *pulse*, maintaining it without exception throughout the excerpt (and much more of the piece). This pulse must be regarded as unmetered if one presumes that meter requires the interaction of a tactus with a higher hierarchical layer—there is nothing in this music to allow the listener to partition these pulses into periodic or semi-periodic measures.

A discussion of the opening nine measures will demonstrate this phenomenon. The wood block's fourth pulse (i.e., the downbeat of notated m. 2) also marks the entrance of the clarinets and synthesizers. At this point the listener is retrospectively able to recognize the first three pulses as a measure of triple meter. However, these additional instruments cannot do anything further to help establish periodicity. The two clarinet parts (i.e., clarinets 1 and 3—reinforced an octave lower by synthesizer 1—and clarinets 2 and 4) are each outlining a pattern that is rhythmically dissonant with the pulse of the wood block. Additionally, these two parts are out of phase with one another, and all the clarinets' and synthesizers' music considered together creates a dizzying, shimmering effect that, because of the rapid tempo (appropriately labeled *delirando*), negates any impact it might have on the perception of meter at the half-note level. The point of initiation for the clarinets and synthesizers might help to make the fourth pulse of the work metrically strong, but following that they have virtually no effect on the perception of meter (or lack of meter).

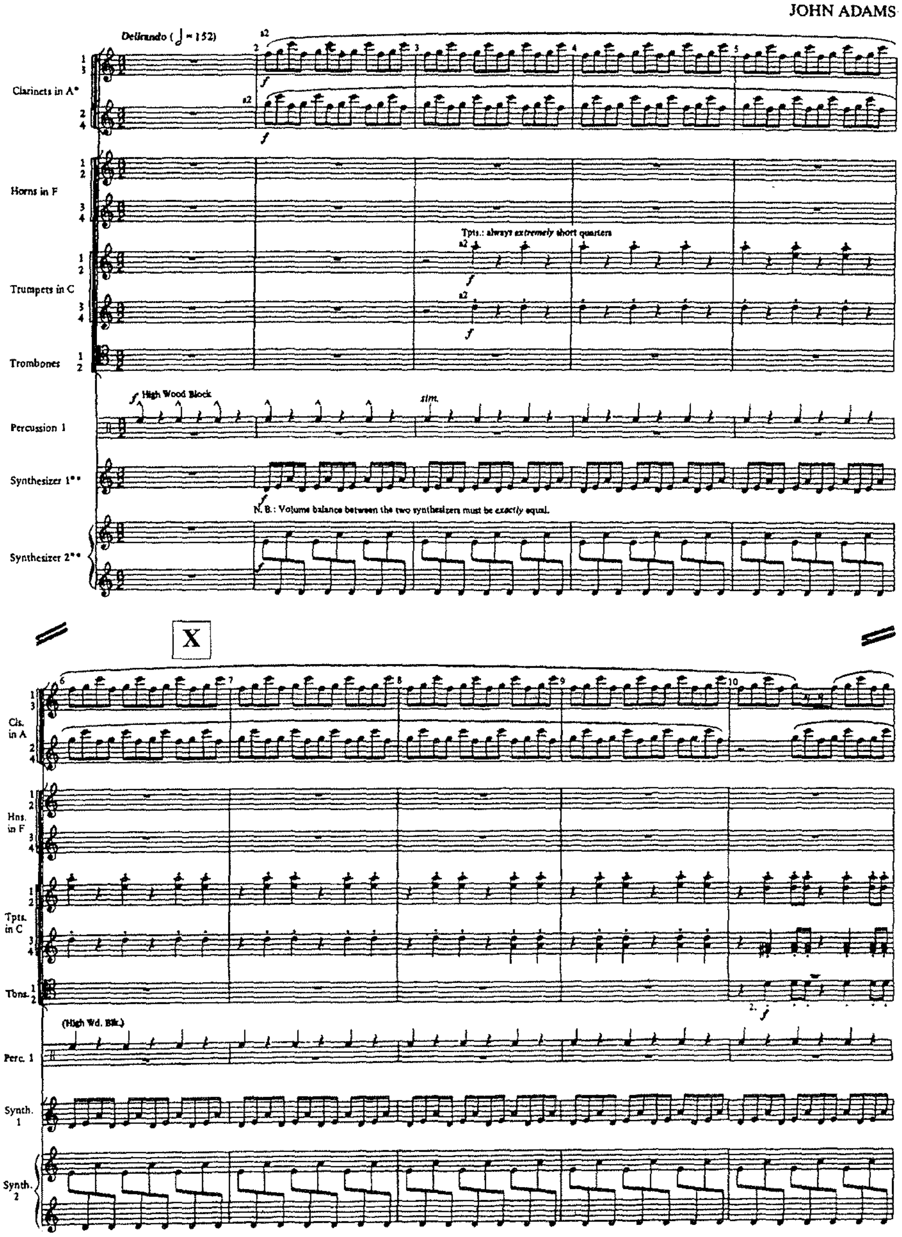
[2]Andrew Imbrie, "'Extra' Measures and Metrical Ambiguity in Beethoven," in *Beethoven Studies*, ed. Alan Tyson (New York: Norton, 1973), 45–66.

[3]Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge: MIT Press, 1983), 22–25.

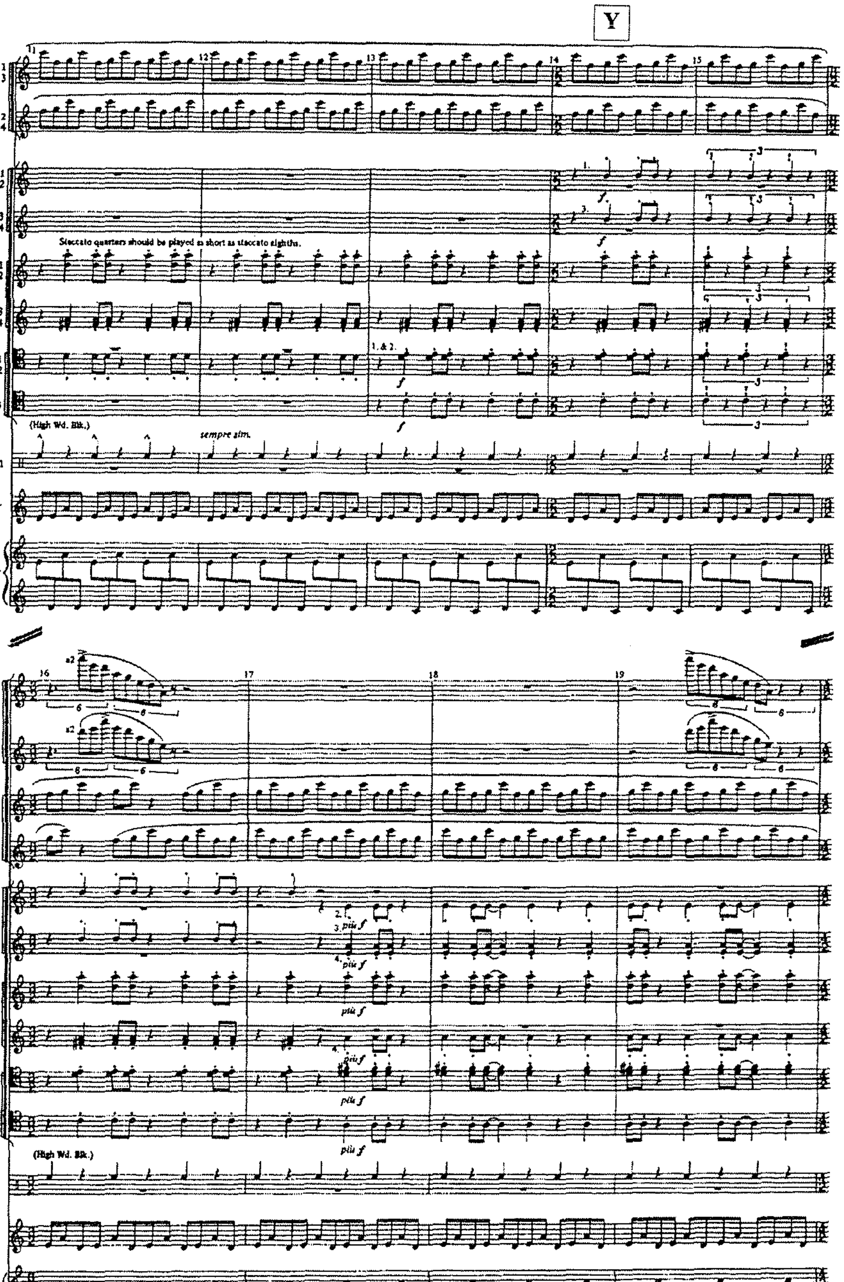
EXAMPLE 1.

SHORT RIDE IN A FAST MACHINE

JOHN ADAMS



EXAMPLE 1 (continued).



EXAMPLE 1 (continued).

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FIGURE 1. Two metrical views of measures 1–9

The next important point of initiation is the entrance of the trumpets with an open fifth (D5/A5) at the second pulse of notated measure 3. Six pulses later the second trumpet marks yet another such point by suddenly clouding that fifth with an E5. The trumpets merely add pitch to the wood block's pulses until the point I have marked "X" in the score (the fifth quarter note of m. 6); aside from their entrance and trumpet 2's move to E5, they do nothing to partition this work into periodic meter up to this point. What metrical perceptions might a listener have of this music so far?

Figure 1 illustrates two alternative answers to this question. Figure 1 shows the trumpet parts of measures 1–9 in a single staff. The upper line of figure 1 is based upon Adams's notation of this section, which reflects a conservative view of unflinching triple meter that is first established by the clarinet/synthesizer entrance. On the other hand, a more radical listener may use the entrances of the trumpets and the second trumpet's shift to E5 to mark downbeats, thus developing an apprehension of the meter of this passage as shown in the lower line of figure 1.

One troublesome aspect of the radical view of this meter is that it requires a great deal of retrospective interpretation. The decision to regard the downbeat of notated measure 2 as the beginning of an extended passage in duple meter cannot be made until the trumpets' entrance in notated measure 3—four pulses later. On the other hand, it is also difficult to acknowledge the conservative view of steady triple meter throughout. In such a reading, the trumpets' entrance and changes—which are the only events after the clarinet/synthesizer entrance that can be used to determine the metrical structure of the opening six bars—

would then occur in metrically weak positions. It would appear, therefore, that Adams has intentionally blurred the meter of this passage. The placement of the trumpets' entrance and changes in pitch material conflicts with the meter implied by the earlier clarinet/synthesizer entrance, yet these events are placed far enough apart from one another to make decisions for more radical metrical reinterpretations difficult. The listener is left to grapple with a strong stream of periodic pulses that resists unambiguous organization into periodic measures.

Figure 1 also shows a new temporal conflict that begins at point X. The trumpets now begin a different repeating pattern that creates segments each three quarter notes long. This is a significant moment in the metrical scheme of the work—up to this point, there existed ambiguity about how to organize the wood block's pulse stream into measures, but nothing about the first six bars contradicted that pulse itself. This new recurring pattern of three quarters' length *does* contradict the wood block pulse, in that every other repetition of the three-quarter pattern begins between the pulses. Figure 2 illustrates the conflict that results.

The X on figure 2 corresponds to the X's in figure 1 and in the score—all mark the fifth quarter note of notated measure 6. The wood block is shown on the lower line of figure 2 as an unmetered series of pulses, per the above discussion. The upper line of figure 2, representing the trumpets, is rebarred as a series of $\frac{3}{4}$ measures. Invoking Christopher Hasty's terminology,[4] one can note that every half note up to notated measure 6 has projected the beginning of another half-note duration. Because the listener has become entrained to hear a new beginning at each half-note beat, the fifth quarter note of notated measure 6 must be interpreted as marking a beginning—even though it is a beginning of a different length of projection than any heard thus far. It is for this reason that I have notated each bar of $\frac{3}{4}$ in the top line of figure 2 as ♩ ♩ 𝄽 and not the otherwise equally likely ♩ 𝄽 ♩.

FIGURE 2. Contradiction of initial pulse (beginning with third beat of m. 6)

[4]Christopher Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997).

The $\frac{3}{4}$ pattern established by the trumpets beginning at point X begins to undermine the half-note pulse stream of the wood block. One might be tempted to call the effect a hemiola, though doing so presumes that the listener is able to perceive a $\frac{3}{2}$ meter (a perceptual reading that is difficult to maintain, as I have shown) against which the trumpets overlay their $\frac{3}{4}$ pattern. The $\frac{3}{4}$ pattern is strengthened by insistent repetition—the fourth trumpet moves to A4 in measure 8, and the entrance of trombone 2 in measure 10 coincides with the shift to a root-position D major triad in the brass, but the length of the periodic rhythmic pattern is maintained. While thickening the texture, Adams also lends weight to the dotted-half durations by changing the rhythmic ostinato: the second quarter note of each repetition is replaced by two eighths beginning in measure 10. (This new rhythmic pattern may also be perceived to suggest $\frac{6}{8}$ as easily as it does $\frac{3}{4}$; this issue will be taken up later in this paper.) The net result is much more than an increase in the tension between the wood block's half-note pulse stream and the brass's new, incongruous pattern.

The extremely fast tempo allows the listener to view each "bar" of $\frac{3}{4}$ laid down by the brass as a unit of a *new* pulse stream. If Adams's tempo indication is respected ("𝅗𝅥 = 152"), then the tactus suggested by the brass, two-thirds as fast, is "𝅗𝅥. = c. 101." This is not at all unreasonable in terms of perception. The technique thus employed is quite similar to Elliott Carter's "metric modulations," in which a sub- or superdivision of a previous tactus is reinterpreted as the new tactus. The important difference in this instance is that the previous pulse stream *is not discarded*. It continues to be articulated just as insistently as before, though the stiff competition for the listener's attention provided by the brass relegates it to a less prominent position. I contend that even the most conservative listener who clings to the half-note periodicity through notated measure 9, in the face of the hemiolaic implications being pounded out above the supposed $\frac{3}{2}$ meter, will finally lose grasp of the half-note pulse in favor of the new dotted half-note pulse at measure 10 or shortly thereafter. From the viewpoint of Hasty's theory, the half-note projections in measure 10 and following are too weak—for an event to be projective it requires a certain quantity of the listener's attention, and it is not reasonable to assume that even a careful listener is focusing on these half notes any longer by measure 10. Meanwhile, the rich rhythmic activity of the new $\frac{3}{4}$ periodicity does make it possible to view this partitioning of time as meter. It is, I believe, this multi-leveled rhythmic activity that pulls even the conservative listener to latch on to the new pulse stream in lieu of continuing to focus on a static, unorganized chain of beats. While Adams does maintain both pulse streams, this is not a truly poly*metrical* composition.

The discussion above demonstrates that this work quickly reaches a point where the time signature as notated has almost nothing to do with the meter as perceived. This may be the case as early as measure 3 (if one adopts the trumpet entrance as a downbeat); measure 6 begins to deconstruct any vestiges of $\frac{3}{2}$ remaining, and by measure 10 it is meaningless to speak of the notated meter in terms of perception. I have therefore renotated the remainder of this excerpt in figure 3, illustrating one possible perception of the passage's metrical nature.

Figure 3 begins at the same point as figure 2. In order to facilitate comparison with the published score I have indicated the measure and quarter-note location of Adams's notation as it corresponds with figure 3 at the beginning of each system. Thus, figure 3 begins at the fifth quarter note of notated measure 6, the second system of figure 3 begins at the fifth quarter note of notated measure 11, and so on. Since my discussion will continue to focus on the metrical implications provided by the brass's figures, I have omitted other elements of the music in figure 3, save for that incessant wood block. The latter is notated as I believe it is perceived: a stream of pulses, not organized into meter, but nevertheless interacting with the brass—now in rhythmic consonance, now in opposition. The reception of the brass's music is made that much more intense and exciting through its superimposition against this other pulse stream.

The main principle I have employed in organizing the music of figure 3 into measures is that downbeats coincide with beginnings of the ♩ ♫ rhythmic figure that permeates the excerpt. This figure appears nine consecutive times beginning in notated measure 10 without alteration, ending at point Y. Each repetition is deemed a new beginning because of the dotted-half length projections supplied by the ♩ ♩ 𝄽 figures that precede measure 10—the shift from ♩ ♩ to ♩ ♫ is made without breaking the periodicity of the dotted half-note projections. The ninth time the ♩ ♫ figure appears at point Y is the first time that the projection implied by this figure is not realized. This ninth statement is followed instead by a triplet figure that (including a quarter rest that follows it) takes *five* quarters to complete, rather than three. This is the $\frac{8}{4}$ bar I have notated at point Y in figure 3. (In light of the three-quarter projection implied by the beginning of the measure, this $\frac{8}{4}$ is properly understood as 3 + 5 quarters rather than the periodic 4 + 4.)

I have already pointed out that it is possible, because of the rapid tempo, to view each of the $\frac{3}{4}$ bars between X and Y as *pulses* rather than measures. However, grouping these $\frac{3}{4}$ bars into larger metrical units (whether one would designate these larger units "measures" or "hypermeasures") is a futile task. The issue is similar to the problem of partitioning the half-note pulses that open the entire work. There are no other events in the music to identify "strong" $\frac{3}{4}$ bars, save for the shift to the ♩ ♪♪♩ pattern in notated measure 10. There is therefore no musical basis for postulating a higher level of meter between points X and Y.

FIGURE 3. Rebarring of opening (beginning with fifth quarter note of m. 6 ["X"])

The music beginning at point Y poses a different situation, however. Immediately following that $\frac{8}{4}$ measure at point Y in figure 3, a pattern of alternating $\frac{3}{4}$ and $\frac{5}{4}$ measures appears. (Recall that, to select the downbeats shown in figure 3, every ♩ ♫ rhythmic statement was regarded as the beginning of a measure.) The projection of a "3 quarters + 5 quarters" pattern is actually fulfilled five times in a row following the $\frac{8}{4}$ at point Y. (Each of the $\frac{5}{4}$ measures beginning at m. 16:2 can be further broken into 3 + 2 quarters, as they are each initiated by the familiar ♩ ♫ rhythmic pattern.) It is thus possible to hypothesize a periodic hypermeter that consists of alternating measures of unequal lengths. In figure 4 I offer another rendering of the same music as in figure 3, this time emphasizing the potential for perception of an $\frac{8}{4}$ hypermeter.

In figure 4, each of the "3 quarters + 5 quarters" rhythmic patterns has been renotated as a single bar of $\frac{8}{4}$. In this barring, it becomes easier to see the repeating $\frac{3}{4}$ pattern, which dominated the music between points X and Y, peek out again for a moment at point Z. The $\frac{3}{4}$ pattern reappears in the last system of figure 4. In a moment I will briefly discuss the possibility for a narrative to describe the interactions between these metrical patterns; for now it will suffice to note the periodicity of the metrical structure represented by this $\frac{8}{4}$ notation.

Following the triplet of measure 15 (right after point Y), each of the $\frac{8}{4}$ bars in figure 4 demonstrates a further rhythmic dissonance on a sub-tactus level. After the triplet there appear four different variations of the $\frac{8}{4}$ measure's rhythm. In figure 5 I show each of these $\frac{8}{4}$ measures with a new beaming to illustrate this rhythmic dissonance. The dotted lines in figure 5 show partitions that have already been discussed: each $\frac{8}{4}$ measure shown can be broken into 3 + 5 quarters, and the five-quarter portion can be further divided into 3 + 2. Taken together, the 3 + 3 + 2 pattern shown in figure 5 results. The beaming of the eighth notes in figure 5 shows what a careful listener may notice—the rhythmic patterns of the three-quarter-note portions of each measure are stereotypical $\frac{6}{8}$ patterns! As more "anacrustic" eighth notes are added in measure 20:2 and measure 23:2, the characteristic alternation of long/short rhythmic divisions is brought to the foreground, and as a result the $\frac{3}{4}$ pattern of these sub-measures is gradually subverted by a hemiolaic $\frac{6}{8}$ pattern. This phenomenon is reminiscent of the way in which dotted-half projections replaced half-note projections earlier in the work, though in this case the hemiola never spawns its own pulse stream.

FIGURE 4. Another barring that suggests periodic hypermeter (for a while)

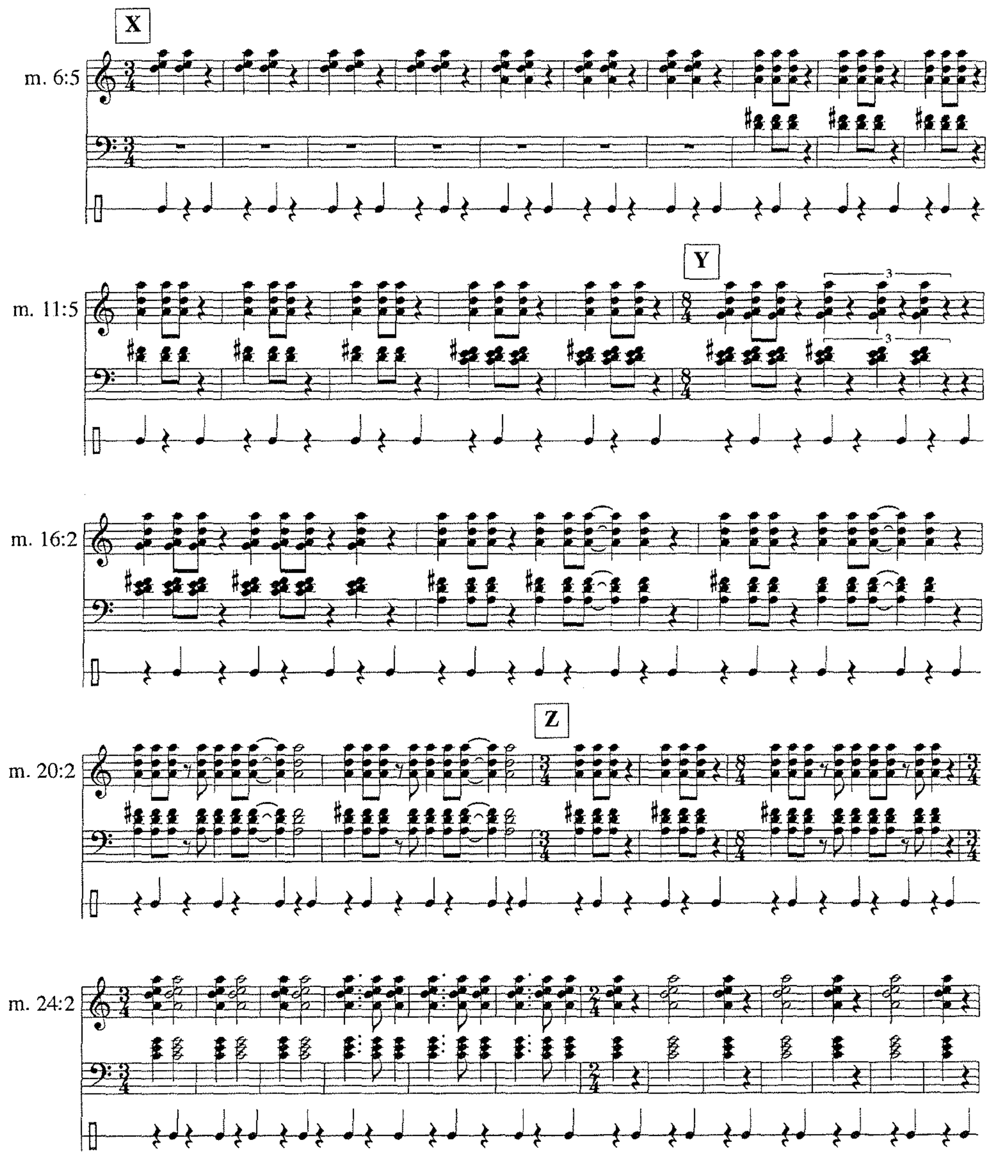
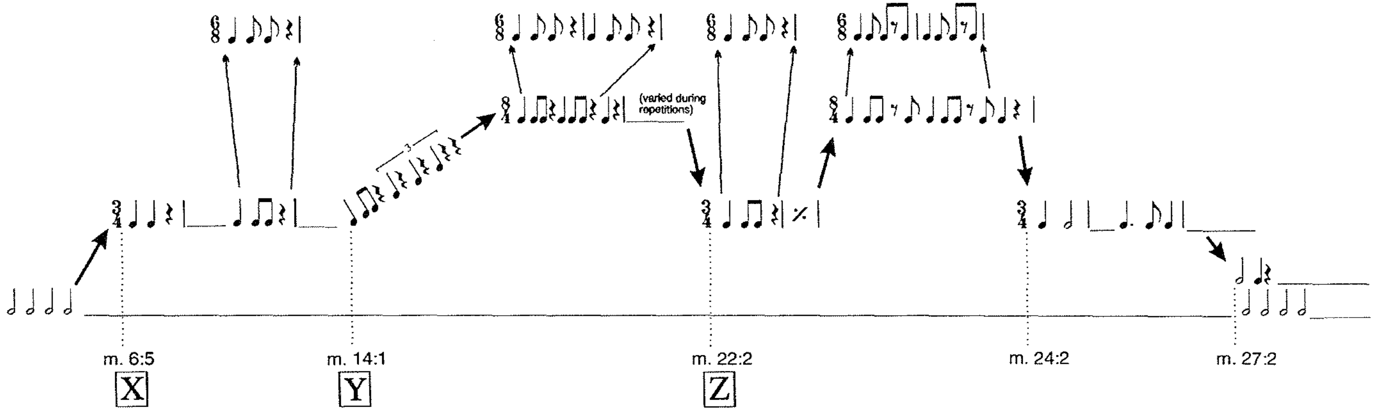


FIGURE 5. Possible " $\frac{6}{8}$ " beamings

The evolution and interaction of the metrical structures in *Short Ride*'s opening can be viewed as constituting a musical narrative. An attempt to illustrate this narrative is presented as figure 6. It should be stressed that this illustration is certainly not drawn to scale with the passage of (clock) time in the music. However, it does provide a summary of *Short Ride*'s journey through several metrical configurations, represented by the large arrows. The smaller arrows specifically indicate the sub-tactus metrical conflict of $\frac{3}{4}$ versus $\frac{6}{8}$ patterns (as discussed above and illustrated in figure 5).

FIGURE 6. A possible metrical narrative of the opening



This figure is not drawn to scale with the passage of (clock) time as the music unfolds.

Dotted vertical lines and measure numbers are used to show how this figure corresponds with the music as notated. ("X," "Y," and "Z" correspond to the same reference points in other figures and in example 1.)

Solid horizontal lines indicate multiple repetitions of the preceding figure.

Large arrows indicate shifts in the perception of meter as described in this article. Small arrows connecting $\frac{6}{8}$ figures with $\frac{3}{4}$ and $\frac{8}{4}$ figures illustrate the metrical conflict highlighted in figure 5 and the discussion accompanying it.

A description in prose of this metrical narrative follows: The opening half-note pulse appears, and is superimposed against the brass $\frac{3}{4}$ patterns beginning at point X. (The long horizontal line in figure 6 indicates that this pulse is articulated throughout the excerpt.) Beginning at notated measure 10 the brass $\frac{3}{4}$ pattern is altered so as to suggest shadows of $\frac{6}{8}$ (indicated by the small arrows). The $\frac{3}{4}$ patterns next *shift* into the $\frac{8}{4}$ meter (which subdivides into 3 + 3 + 2 quarters) at point Y—one can almost hear the driver "grinding the gears" as the music tumbles through the triplet to arrive in the $\frac{8}{4}$ meter. The $\frac{8}{4}$ patterns are varied while repeated, but the integrity of their 3 + 3 + 2 subdivisions is maintained—we seem to "cruise" in this metrical pattern for a while. Beginning at point Z, the music oscillates between $\frac{8}{4}$ and $\frac{3}{4}$ patterns, then "downshifts" back to the level of the half-note pulse at measure 27:2—though this pulse is out of sync with the half-note pulse that has pervaded the entire work thus far.

My use of transmission-related metaphors was deliberate. The motion between various metrical and quasi-metrical structures may be analogous to the efforts of an inexperienced driver struggling with the clutch of a souped-up sports car![5] Moving up vertically on figure 6 into meters that require more time for each "cycle" might represent shifting into higher gears. Finally, the omnipresent, unchanging woodblock pulse indicates that the engine of this machine continues to hum incessantly once it is started, regardless of the changes in speed and/or gear attempted by the driver. This music, as represented in this metrical narrative, can be seen to represent the tricky interaction between man and machine suggested by the work's title. It certainly seems fair to say that Adams has taken the notion of "motor rhythms" to a new level!

* * *

Of course, the metrical issues involved in this music are not unique to this work or even Adams's oeuvre. One of the fundamental compositional strategies employed by minimalist and post-minimalist composers is the creation of an engaging metrical structure through the array of varied ostinati against a steady pulse stream (and against each other). The most famous harbinger of this

[5]Adams's own discussion of the piece intimates that this narrative might be viewed from the point of view of a *passenger* in the car rather than that of a novice driver. The unpredictability of the metrical changes would thus be analogous to the experience of riding with a "crazy" driver. Viewed from the perspective of an inexperienced *driver* in an unfamiliar, powerful sports car, that same unpredictability can be seen to result from being unacquainted with the nuances of a sensitive clutch and accelerator—the driver doesn't have the right "touch" for the controls, and the vehicle revs unexpectedly.

approach is perhaps Terry Riley's semi-improvised *In C* (1964); Adams's own *Phrygian Gates* (1977) and *Nixon in China* (1985–87) also contain sections that generate interest by means of the metrical interaction between a pulse and a few short motives that are varied while repeated.[6] As I have illustrated in my analysis, this music suggests a mode of interaction for the listener that hinges upon tracking the eventual changes in metrical structure marked by various ostinati and those patterns' shifting relationship with an underlying pulse stream. In the case of *Short Ride*, this metrical narrative is further elucidated by the vehicular reference in the work's title.

It is telling that in these pages I have only described the most obvious rhythmic and metrical features of this fanfare's opening. As Hasty points out, even the most banal of periodic music generates a series of implications that are much more complex than one might suppose. We should therefore not be surprised at the complications that arise when exploring the temporal world of *Short Ride*. Its very design pulls its audience into attempting to discover metrical regularities without allowing those regularities to persist. The result is an engaging and complicated work that brings its listeners to the very edge of metrical experience.

[6]This compositional technique stands in contrast to another minimalist approach that might best be described as "phase music," in which two or more performers (or playback devices) repeat the same musical events at imperceptibly different tempi, causing the parts to gradually go out of sync with one another. An early example of phase music is Steve Reich's *Come Out* (1966); his *Violin Phase* (1967) and *Piano Phase* (1967) are better-known representatives of this sub-genre. Bridging the gap between phase music and minimalism based on a single pulse stream is Reich's *Clapping Music* (1972). In this work two performers share a single pulse stream but shift in and out of phase one pulse at a time instead of employing multiple tempi.