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The sonic illusion of metrical consistency in recent minimalist composition

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ABSTRACT

Meter is often thought of as a fixed property that readily withstands the challenges of unusual surface rhythmic patterns. This study will explore the elasticity of our metrical perceptions in recent minimalism, demonstrating instances where motives repeat erratically yet sound so consistent that we hear metrical effects. Musical examples will come from recent minimalist and postminimalist compositions, especially John Adams's Lollapalooza (1999).

Keywords

Minimalism, meter, rhythm, Adams, Lollapalooza.

BACKGROUND

Meter is often thought of as a fixed property that readily withstands the challenges of unusual surface rhythmic patterns. Lerhdahl and Jackendoff (1983) certainly maintain this viewpoint with their sharp distinction between meter and grouping. As Palmer and Krumhansl (1990) have shown, Lerhdahl and Jackendoff's theoretical constructs apply best to music that avoids use of polyrhythms. More recently, Hasty (1997) and Horlacher (1992, 2001-2) have made the case for a far more causal relationship between

rhythm and meter. In the realm of minimalist music, where literal or varied motivic repetition frequently projects metrical (or at least meter-like) structures and where musical textures can be rather dense, containing several possible metrical layers, Hasty's and Horlacher's flexible approaches seems more apt.

TWO SLIPPERY CONCEPTS

Meter is one of those concepts that can more easily be applied than defined. One of the most oft-cited definitions of meter (Lerdahl & Jackendoff, 1983) has recently come under increased scrutiny (c.f., Hasty, 1997 and London, 2004). The traditional notion that meter is defined by and relies upon a periodic alternation of weak and strong beats, that beats be equally spaced, and that the whole structure is hierarchical rings true for most Western common practice music. We will, however, be exploring some seemingly metrical music that conflates the boundaries of grouping and meter.

The primary premise of Hasty's book is that surface rhythms define meter. Meter is therefore not an a priori property, but something that falls out of the musical rhythms. Such a view allows us to make broader metrical claims; the definition is also loose enough to generate a good measure of musical disagreement. By contrast, the central premise of London's recent book is that "meter is a form of entrainment" (4). While these alternative ways of coming to terms with meter sprout from quite different epistemological gardens, both would seem highly applicable to minimalism.

Like "meter," "minimalism" is also a far simpler musical label to affix than to justify. Whatever else it entails, repetition of relatively short musical segments would seem to be the *sine qua non* of minimalism. One could either argue (after Hasty) that pervasive repetition leads to metrical un-

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derstanding or (after London) that pervasive repetition quickly entrains listeners, allowing them to perceive meter.

Pragmatically, the origins of meter seem relatively inconsequential until a metrical foundation is either challenged where it ought to be heard or else heard in a situation where it ought to be challenged. The latter situation arises frequently in recent minimalist composition, particularly in the works of American composer John Adams. Adams often worked with multiple layers of motivic ostinati, simultaneously offering various potential metrical interpretations. But meter is clearly a perceptual duck-rabbit: when faced with multiple competing metrical layers, listeners may attend (whether consciously or not) to only one at a time.

METER AND COHERENCE IN ADAMS'S *LOLLAPALOOZA*

Adams's short orchestral work *Lollapalooza* opens with a bluesy one-bar motive played by the bass clarinet and bassoons (shown in Figure 1). It forms a regular ostinato for the first 29 bars and effectively serves as the primary metrical layer, providing a clear triple meter from the outset.



Figure 1. “One-bar blues” motive from *Lollapalooza* (repeats from mm. 1-29)

For six bars, that pattern remains unchallenged, but on the downbeat of m. 7, a three-note motive comes in. We could call it “motive A” or “three-note motive” or some other arbitrary name, but to me it sounds like the clarinets are asking “how are you?” Figure 2 shows the juxtaposition of “how are you?” and “1-bar blues.” The “how are you” motive recurs every four beats, creating a grouping dissonance (to borrow Peter Kaminsky’s and later Harald Krebs’s term). If the two ostinati both have the potential to project meter, then this grouping dissonance between a three-beat layer and a four-beat layer could challenge our established triple meter. How we perceive the conflict depends in large part on whether we are more likely to follow an established pattern or latch onto a new one. That is nothing that one can formalize, I think, but rather it provides a window of interpretive freedom.

Figure 2. Grouping dissonance between “one-bar blues” and “how are you?” motives in mm. 7-9 (relationship continues until m. 12)

Figure 3. Displacement dissonance between “one-bar blues” and “how are you?” motives in mm. 12-14 (relationship continues until m. 23)

That interpretive window closes — or, rather, the scene we observe from that window changes — in m. 13. After just six bars of the 3/4 versus 4/4 grouping dissonance, the relationship between “one-bar blues” and “how are you?” fundamentally shifts. See Figure 3. At this point, Adams begins repeating “how are you?” every three, not four, beats. This does not resolve our metrical dissonance; it merely changes its type. In the notated 3/4 meter, “one-bar blues” recurs every downbeat; “how are you?” begins a beat later. This as an example of what Krebs calls a “displacement

dissonance.” The distinction between dissonance types is not merely academic. When the motives are opposed through grouping dissonance, they seem to exist on radically different musical planes and their relationship is ever changing. As soon as “how are you” adopts the same periodicity as “one-bar blues” you can feel their relationship become ossified.

The sense of becoming fixed in time (to paraphrase Gretchen Horlacher) frequently goes hand-in-hand with the sense that two separate motives are actually fused into a single pattern. Put another way: because displacement dissonances do not challenge our sense of metrical periodicity (though they may challenge our sense of downbeat), two ostinati that form a grouping dissonance are far more likely to be differentiated as separate motivic strains than are two ostinati that form displacement dissonances.

By intermingling these two types of metrical dissonance — often willy-nilly — Adams projects a freer relationship between two textural lines. This is one feature that sets his minimalist technique apart from that of Steve Reich or Michael Torke, who generally don’t oscillate between metrical dissonance types quite so readily.¹ What complicates our hearing of grouping and then displacement types of dissonance at the beginning of *Lollapalooza* is the entrance of yet another motivic layer just as the periodicity of “how are you” is shortened to three beats. Beginning at the up-beat to m. 13, a two-beat descending motive seems to answer “how are you?” with something like “I am just fine, thank you.” (In m. 12, “how are you” is heard on beat 2 and “I am just fine, thank you” follows, played by the piccolo, E-flat clarinet, and piano.)²

As shown in Figure 4, there is a grouping dissonance between (on the one hand) the battling triple meters projected by “one-bar blues” and “how are you?” and (on the other hand) “I am just fine, thank you.” But it is not a terribly consistent grouping dissonance. The second iteration of “I am just fine” comes four beats after the first. Subsequent iterations come 4.5 beats later, then at increments of 3.5, 3.5, 4.5, 4, 4, 4, 4 beats. Just when we think we have settled in to a consistent four-beat pattern, the motive recurs at 3.5 beats, then 4.5, 2.5, 3, 3.5 beats, then far more erratically at 7, 11, 4, 6.5, and 9.5 beats intervals.

There is a distinct lack of measured consistency, but until the truly erratic passage, it looks and sounds as though Adams is working in approximate periodicities. From mm. 13 to 27, Adams repeats “I am just fine, thank you” roughly every four beats. If we were thinking of this in terms of standard deviation from mean, four-beat repetitions would be the mean and the greatest displacement during that period would only be half a beat. In a rapidly thickening texture, and one that is increasingly fraught with metrical conflicts of various sorts, it can be a bit tough to hear the difference between 4 and 3.5 beats or between 4 and 4.5 beats (obviously, these would be easy to differentiate if one could loyally attend to a single predominant metrical layer).

¹ Generally speaking, the sort of phasing for which Steve Reich is known is a form of displacement dissonance. In fact, some of his works, including *Clapping Music* (perhaps the ultimate piece of textbook minimalism), might be characterized as systematically exploring all possible displacement dissonances. First two strands are synchronized, then displaced by one eighth note, then two, then three, and so forth until they reunite. However, the system by which Reich moves from one displacement dissonance to another frequently involves grouping dissonance (temporarily lopping off one beat or else adding an extra one to one of the two parts being phased).

² Incidentally, Adams claims that he called the piece “Lollapalooza” because that word sounds a lot like the work’s central motive (see Figure 5). I take that as license to use my own onomatopoeic motive labels.

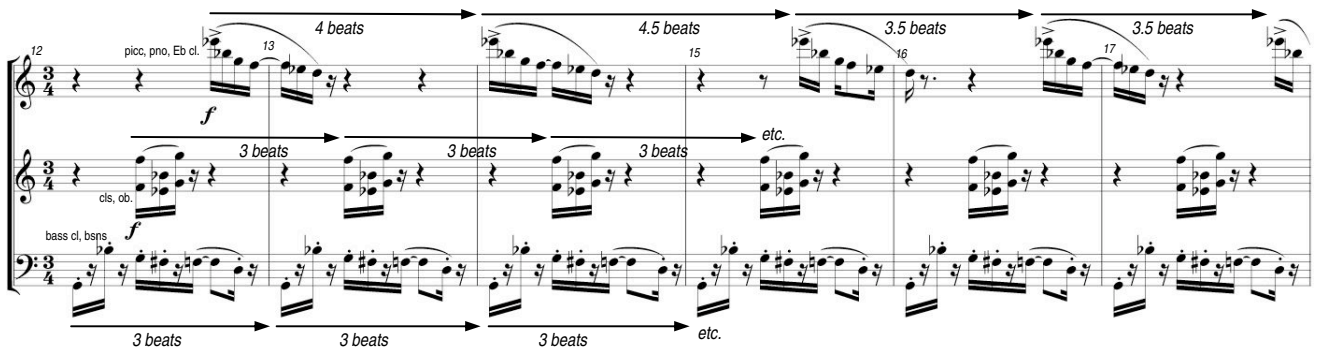


Figure 4. Irregular grouping dissonance between “how are you?”/“one-bar blues” and “I am just fine, thank you” motives in mm. 12-17

Though there is incredible compositional flexibility at play, iterations of “I am just fine, thank you” mimic periodicity at least until bar 27 where things start to go a bit haywire. More to the point, the “I am just fine” ostinato certainly has the potential of being heard as a metrical layer. The motive’s initiating note exhibits hallmarks of a musical downbeat (including its rhythm, contour, and amplitude). If meter can be formed by (even roughly) periodic groupings and/or if it is a matter of entrainment, this particularly salient ostinato — placed in a jungle of conflicting ostanti — can convince us that we are hearing consistencies even when we are not.

Indeed, this seems consistent with findings by Palmer and Krumhansl (1990), including that meter is often determined by relying upon multiple variables and that Lerdahl and Jackendoff’s theoretical constructs apply best to music that avoids use of polyrhythms. In a musical setting as complex

as *Lollapalooza*, it would be surprising if listener’s could simply internalize and maintain a strong sense of downbeat expectation. Despite the complexity, however, I suspect that most listeners would find this musical space to be highly governed by meter.

Another instance of this sort of rough periodicity centers around the “lollapalooza” motive, which, in the composition’s first half is heard between mm. 24 and 72 (an excerpt is shown in Figure 5). At its onset, and for fifteen bars thereafter, it occurs every five beats. The “lollapalooza” motive is projected forcefully and is distinct enough that it easily cuts through the thick polyphony, establishing a dominant, if slightly unusual, five-beat metrical layer. In my own hearing of this work, I strongly associate the “lollapalooza” motive with a loud articulated brass fifth in the second and third trombones. (It might well be timbre and/or amplitude that leads me to associate them.)

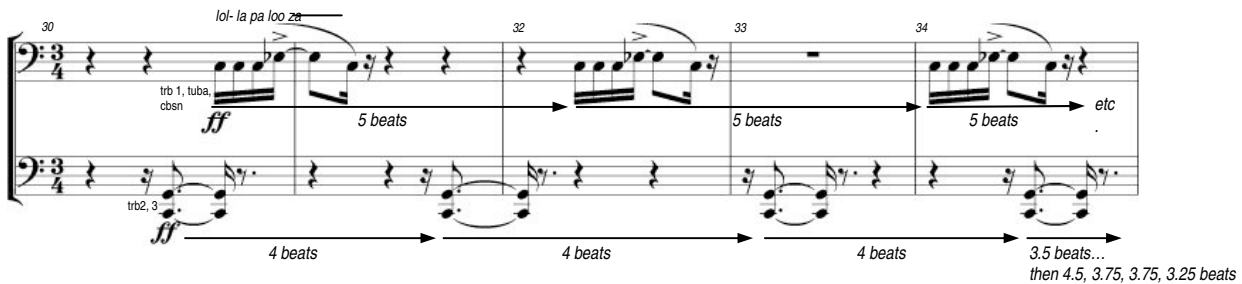


Figure 5. Grouping dissonance between “lollapalooza” and “brass fifths” motives in mm. 30-34

Figure 5 displays the relationship between these two motives for five bars. They initially form a five-against-four grouping dissonance (or Krebs’s G5/4). That shifts in bar 35 when the brass fifths recur erratically after 3.5 beats, then 4.5, 3.75, 3.75, and 3.25 beats. For a longer view of the relationship between these two motives, Figures 6 and 7 map out the onset histories of “lollapalooza” and “brass fifths,” listing the position of each recurrence.

As you can see on Figure 6, in m. 39, there is also a shift in the “lollapalooza” motive: after reliably (indeed, metrically) recurring every five beats, the ostinato stretches to a median periodicity of 6.5 beats. Meanwhile, the median

periodicity (and also very nearly the average) of the brass fifths articulation is 3.75 beats. Despite the great difference in median periodicities, by-and-large these two motives alternate. So we generally hear one iteration of “lollapalooza,” then one iteration of brass fifths, and so forth, which makes the two seem joined at a rather disjointed hip. This, however, is squarely a matter of grouping, not meter. Indeed, the brass fifths motive, seems ill-suited to form a metrical layer, particularly because it is merely a held pair of notes and has no particular rhythmic character and therefore features no rhythmic subdivisions or implications for periodic and hierarchical structures.

Meas:	24	25	27	29	30	32	34	35	37	39	41	43	45	48	51	52	54	58	60	62	65	67	70	72
beat:	1	3	2	1	3	2	1	3	2	1	1.5	3	3.5	1	2.5	3	3.5	1.5	2	3.5	0	2	1.5	2
beat int:		2	1	2	2	1	2	2	1	2	1.5	2	2.5	2	1.5	2	2.5	2	1.5	2	3.5	1.5	1	0.5

[mm. 41-72: median temporal distance = 6.5 beats]

Figure 6. “Lollapalooza” motive timeline (measure num., onset beat, beat interval between onsets)

Meas:	30	31	33	34	35	37	38	39	40	41	43	44	45	46	48	49	50	51	53	54	55	56	
beat:	2.25	3.25	1.25	2.25	2.75	1.25	2	2.75	3	3.75	1.5	1.25	2.5	3.25	1.5	2.25	2.5	3.25	1	1.75	2	2.75	
beat int:		1	1	1	0.5	1.5	1.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75

[median = 3.75]

Figure 7. “Brass fifths” motive timeline (measure num., onset beat, beat interval between onsets)

Here, too, rough periodicities and general observations lead to more musically relevant analytical conclusions than one might find using less flexible notions of meter and consistency. Moreover, metrical entrainment relies almost entirely upon motivic ostinati that are projected in local contrapuntal strata rather than more holistically through the entire musical texture. As the distance separating iterations of a salient motive gradually expands and contracts, we are likely to forgive the variances, keeping a hold on our general impression of metrical continuity wherever possible.

Ironically, in this particular composition, the most temporally periodic layer is not perceived as metrical at all. As I discussed in an earlier paper (Buchler 2005), a seemingly random series of articulations at the composition’s outset falls on offbeats (measured against the strong “one-bar blues” layer), but generates a long, complex, and recurrent series.

CONCLUSIONS

In the 1960s, at the beginning of the minimalist movement, motivic repetitions tended to be unvaried and ostinati continued for long stretches of time. Such works were either metrical or not, but only rarely did they exhibit metrical shifts. Latter-day minimalists (sometimes dubbed “post-minimalists”) have often created through-composed (as opposed to process-generated) music that sounds repetitious, sounds processive, and even sounds metrically constant.

Postminimalist compositions (like *Lollapalooza*) that give the impression of being metrically rigorous can shed light onto the question of what “sounding metrical” entails. As such, this musical genre provides a wonderful laboratory for perceptual investigations. It seems fairly unremarkable when something both *is* metrical and *sounds* metrical. But when something that sounds metrical fails to meet our strictest definitions of meter, we ought to begin questioning our definitions and/or examining the elasticity of our metrical fabric.

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