

Cognitive and Aesthetic Aspects of Metrical Ambiguity

for Gretchen Horlacher, Colleague and Friend

1. Moving with a March

Consider a march, Sousa's *Washington Post*, for example. A march like this invites, indeed begs for our movement—it is hard NOT to tap your toe to it. Almost all music does this, of course, but if a piece is metrically unambiguous, and lively and quick, it especially does this.

Moreover, such music invites not just our individual engagement, but the collective, coordinated engagement of the entire audience. We are hearing in time (and often as a result, moving in time), together. William H. McNeill, the respected historian who has written on Toynbee, Technology and Military History, and the Rise of Western Civilization, also wrote a fascinating book on a rather different topic. *Keeping Together in Time*, inspired in part by McNeill's own experience on the parade ground in WWII, is a study of "dance and drill in human history." There he develops his theory of "Muscular Bonding"—the collective enactment of a shared rhythm. McNeill especially notes the social aspect of such coordinated action, as it:

"constitutes an indefinitely expansible basis for social cohesion among any and every group that keeps together in time, moving big muscles together and chanting, singing, or shouting rhythmically" (McNeill 1995, p. 2).

Moreover, muscular bonding has particular emotional and affective properties. It is a diffused emotional response, not based on the encounter with a particular stimulus. Instead, moving in time "makes us feel good about ourselves . . . and vaguely pleased with the world at large" (p. 2). This explains, perhaps, our

"continuing human penchant for moving together in time. American football Crowds, South African demonstrators, patriotic parades, and religious rituals of every description all draw on the emotional affect of rhythmic movements and gestures" (p. 5)

I find McNeill quite convincing in his introspective reports as to the affective qualities of collective movement. Moreover, and as a musician and music theorist interested in the psychology of rhythm, I would go further: overt movement isn't necessary. Simply hearing, attending, and internalizing rhythms can have a similar effect. This is what music does to an audience, and how it gives audiences a visceral sense of a shared, collective aesthetic experience.

With that in mind, I want to examine two questions. First, how exactly does music engender this shared, collective aesthetic experience? Second, what happens when it doesn't? Or to put it another way, what is aesthetic effect of metric ambiguity.

In the pages that follow, I will first discuss meter as *entrainment*, our capacity for interactive sensory-motor synchronization and coordination, in a specifically musical context. This is the answer (or at least part of an answer) to the question "how does music get us to move together in time." Metric ambiguity can then be considered as a partial inhibition of our capacity for entrainment. Next we consider two case studies of this inhibition. The first is the opening of the

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Second Tableau of Stravinsky's *Svadebka (Les Noces)*, and the second is an extended passage from Reich's *Music for 18 Musicians*. As will be shown, Stravinsky and Reich inhibit entrainment in different ways (in short, Stravinsky gives self-contradictory metric information, while Reich oftentimes gives too little). The presentation then concludes with a consideration of the aesthetic aims of metric ambiguity, in light of the kinds of musical and social experience such ambiguity affords for the listener.

2. Entrainment and Meter

Entrainment (also referred to as attunement) involves the temporal coordination of rhythmic activity between two or more oscillatory rhythmic systems. These systems could be two coupled mechanical processes, a mechanical process and an organism, or two or more organisms. Technically, entrainment obtains when there is any phase locking between two oscillatory/periodic systems. Phase locking is achieved when the actions of the two oscillators are coupled in some fashion. In addition, we often can distinguish between the driving oscillator, which can be a musical stimulus or some other external rhythmic source, and a driven oscillator, in our case aspects of the listener's attention and motor behavior. There may be more than one driving or more than one driven oscillator—a single periodic rhythm may trigger a set of oscillators that characterize a complex dynamic system (see Glass & Mackey 1988), or a population of individual oscillators. Entrainment is most often described in terms of a 1:1 relationship between the driving and driven oscillators, but it can involve other ratios. In many human behaviors, and especially musical behaviors, entrainment involves a coordinated *set* of entrainments, some of which may be in 1:1 relationships with the driving oscillator(s), but with other ratios necessarily obtaining between other component periodicities.

Entrainment is obviously involved when we observe coordination of a motor behavior with an external, periodic stimulus (e.g., tapping along to a metronome). However, as Mari Jones and her colleagues have shown (Large and Jones 1999; Drake, Jones, and Baruch 2000), entrainment also involves our attention, apart from (but of course closely related to) our motor behavior. Indeed, coordinated motor behavior presumes some coordination of attention, both for monitoring the external rhythm and for self-monitoring of one's synchronized action. Thus entrainment not only guides how we interact with the world, but also our perception of it. For we perceive the objects of our entrainment differently, with heightened attention of both themselves and ourselves. This in part, perhaps, explains McNeill's observation that keeping together in time "makes us feel good about ourselves . . . and vaguely pleased with the world at large."

Entrainment occurs within a particular temporal range, from one tenth of a second, or 100ms, to about two seconds, though more complex sequences can be longer, up to about 5-6 seconds. Within this range there are several sub-ranges in which our entrainment characteristics differ (these are 100-400ms, 400ms to 1 second, and 1-2 seconds), and as a result our rhythmic perception and performance is quantitatively and qualitatively different in these ranges. (for details see London 2004, pp. 27-47). For coordination of human action/interaction, entrainment most crucially involves coordination of the higher-level component periodicities (in the 1-3 second range) of a hierarchically-organized set of rhythms. For these are the temporal markers for more complex motor/action sequences—you have to know "when to come in" in the

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pitch pattern: D-D-D-C-D, the last element being a return to the main pitch. Each time the D-D-D-C pattern begins the initial D is marked by a crisp three-stroke roll in the snare drum. Rhythmic boundaries in this passage are also marked by texture (soloists w/chorus versus chorus alone), dynamic accent, and the rhyme scheme:

Pree-chee-stah-ya mat,
Kha-di, kha-di k nam u khat,
Sva-khe pa-mah-gat,
Ku-dri ras-chi-sat.

Translation:

Pure mother, come, come to our hut,
Matchmakers help to comb out the curls,
(and it continues, with soloists interjections underlined)
Khfetis' curls, to comb out the curls,
Parfilevitch's light-brown curls.

N.B. The underlines in the translation correspond to those “interjections” of the soloists and chorus—this textural thickening occurs when the groom’s name is called out. Thus the beginnings and endings of the *popevka* figure are marked in multiple parameters, with strong associations between metric position within each parameter (e.g., the short drumroll occurs on a downbeat). In short, it projects a sense of 3/4, without any pickup notes (in other words, a dactylic rhythmic figure that is in phase with a 3-beat meter).

Even before we get to the hiccups, however, this figure’s relationship to 3/4 isn’t quite so straightforward. The musical surface is, for the most part, a constant stream of 8th notes. At the marked tempo of quarter note = 120, the 8th note-based syllables/notes are too fast to heard as beats. Rather, beats emerge at the quarter note level. [In the Harmonia Mundi recording conducted by Zdenek Kosler, the tempo is a bit faster, a quarter note = 130.] At this tempo, or even if it is performed a bit faster, there is an interesting perceptual effect. The rapid quarter note pulse is almost, but not quite, also too fast to be heard as a beat (recall the 400 ms threshold noted above). In metronomic terms, the beat vs. beat subdivision boundary occurs around 150 BPM. In addition, we strongly prefer periodicities around 600ms, or 100 BPM (this is the area of “Maximal Pulse Saliency” described in Parncutt 1994). But Stravinsky doesn’t give us a periodicity near this range, for as these pulses are grouped in threes, the next metric level has a period of around 43 BPM (1380ms IOI). So this is a perceptually somewhat unstable triple meter.

3.1. The Hiccups in Detail

The *popevka* motive immediately repeats, or at least seems to, with the first four notes the same: D-D-D-C, with its onset marked by the drumroll. So at that moment we might infer that a simple triple meter will ensue. But the return to D is delayed by a leap up to F and then a descent back down, creating the extended figure: D-D-D-C-F-E-D. The return to D is only a weak indication that this is the end of the figure, but the next note has a dynamic accent and the drumroll, giving

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it a strong sense of motivic onset. This assists us in hearing the next five notes as a unit: D-C-F-E-D, followed by an 8th note rest. We thus notice that this is repeat of the end of the previous figure:



We hear this organization, even though the pitch repetition obscures the motivic boundary. This is a direct musical analog to a common type stutter and “repair” in speech, where one repeats part of a phrase. The “repair” is either the iteration of a mistake, or more plausibly, the re-iteration of a deviant utterance to show that it was not a mistake. Since this involves an alternative approach to the end of the phrase (the final pitch D, now approached from above rather than below), this kind of repair involves “backing up and repeating some elements prior to the trouble spot” (here, the skip to the F). In speech this is known as “anticipatory retracing” (Levelt 1989, p. 490). The “repair” motive terminates with an 8th-note rest, and so as a result the lengths of the first three rhythmic groups are: 6-7-6 eighth notes; but more precisely, 6-(6+1)-6, as the middle unit is expanded via an “infix” (as opposed to a prefix or suffix). Thus while the second figure bobbles the sense of 3/4, the motivic repair restores it.

The opening motive is again repeated, this time an exact repeat of the D-D-D-C-D figure. Rather than ending with an 8th rest, however, there is an abrupt textural discontinuity (entry of the soloists, forte dynamics, new pitches, new motive):



This clearly is an interruption of the chorus’s repeat of the opening figure. Remember that this interruption involves calling out the Groom’s name, first his given name (*Kheftis*) and then his patronymic (*Parfilevitch*). Following this, the chorus tries to articulate the *popevka* again, but is again interrupted. Things then settle down after the second interruption, as we have (a) a repeat of the 7 note extended figure plus repeat/repair, as in measures 2-3) (b) a final repeat of the D-D-D-C-D figure. A new section begins in the next measure (again, the 8th note rest is absent).

3.2 The Rhythmic Result of the Hiccups

The grouping structure of the entire passage may be diagrammed as follows:

6	(6+1)	6	(6-1)	6!	(6-1)	6!	(6+1)	(6-1)	(6-1)
Basic motive	Extension	Repair	Basic motive, truncated	Inter-ruption	Basic motive truncated	Inter-ruption	Extension	Repair truncated	Basic motive truncated

The average length of the metric unit is six 8th note IOIs, but I am not making an argument for statistical listening (i.e., that we infer a sense of 3/4 from the emerging average length of the

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popevka presentations). It is clear, though, that we don't have (a) something like 2/4 or 4/4, (b) while 3/4 might be operative—as the *popevka* strongly implies—it isn't stable on the bar level, and (c) we don't have a stable non-isochronous meter (e.g., 6-7-6-7 . . .). The 5s and 7s are hiccups, measures manqué. As our sense of the downbeat's location is constantly thwarted, we have an attenuated sense of the higher level metrical organization. We can thus only weakly coordinate our entrainment/virtual movement with the D-D-D-C-D motive, as we just aren't sure where it will start. As David Huron has pointed out:

Segments of his [Stravinsky's] music exhibit a systematic organization whose purpose is to actively subvert the perception of meter. Although his music remains highly rhythmic, some of Stravinsky's most distinctive passages are methodically 'contrametric' in structure" (Huron 2006, p. 333).

In her 1995 JMT Article on "*Metric Irregularity in Les Noces*" Gretchen Horlacher argues against hearing these shifts against a "background periodicity" as suggested by van den Toorn (Journal of Musicology, 2003). In van den Toorn's analysis, the listener maintains a 3/4 meter while the surface alignment shifts in and out of phase with it. This is a necessary precondition for van den Toorn's notion of metrical *displacement*, whereby in lieu of the morphological development of a motive, a motive is developed by putting it in a variety of metric contexts, most especially by shifting the phase relation between the motive and its metric frame (van den Toorn 2003, pp. 290-91). Displacement presupposes a stable and fixed background meter.

Horlacher rejects the notion of this background periodicity, and I agree with her on that. The background meter here (and elsewhere) is not robust enough to be maintained by the listener while these putative displacements take place. I too prefer a more "radical" as opposed to a "conservative" mode of hearing the meter in this passage. But I disagree with Horlacher's claim that "the pitch D can be heard in all three metric contexts" (1995, p. 288—that is, as a downbeat, as an offbeat, and as a weak beat). Of course, this is true within the *popevka* motive itself, as the first three Ds are a downbeat, an offbeat, and then a weak beat. Rather than tell "the story of pitch class D" I would tell the story of the *popevka* motive in toto. Moreover, when we here a D supported by the drum-roll sound, we know it is a downbeat, a D which usually marks the start of a series of Ds. It is due to those associations that we can hear the beginning of the *popevka* motive in a relatively fixed metric fashion. Conversely, the D that ends the "stretch" figure in the first hiccup does not have this contextual/timbral support. While a conservative metric hearing would put this D on the downbeat of a measure (as Stravinsky in fact notates it), we immediately know something is off, as it lacks the snare drum's support. The next D, accented and supported with the snare's roll, confirms that a motivic game is afoot. Thus we have a more supple rhythmic figure, if not in how it may begin (which seems fairly fixed), then in how it can unfold and end.

I also disagree with Horlacher's larger claim that "by virtue of the regularity of their patterning, the instances of ostensible metric irregularity together produce a relatively stable perceived meter" (p. 302), and she goes on to say "I am arguing here for a contextually-determined cyclic meter that may be inherently irregular" (pp. 302-03). I think that the notion of "an inherently irregular meter" is an incoherent claim. If the measure level is unstable, one can't have a "meter" in the usual sense of the word. What I think Horlacher trying to say is that we have a

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stable association between the D-D-D-C sub-motive and the onset of unit that *ought* to be three beats/six pulses long. But this “*ought*” is continually thwarted. We are in agreement, however, with the upshot of Stravinsky’s motivic machinations: in this Tableau, a game is being played with the *popevka* figure and its relation to its implied meter.

To summarize, in the opening measure of this tableau, a nearly continuous level of 8th note pulses is established and maintained. They are too fast to be heard as beats. A five note (plus rest) *popevka*, which strongly implies a three-beat meter is first articulated. But then this figure is expanded or truncated in subsequent presentations. As a result, it becomes metrically unmoored. These expansions and truncations affect the beat relative to the constant stream of 8th note pulses. While the beat period is stable—we are never tempted to hear a tactus on the dotted quarter note level, for example—the beat phase shifts in discontinuous fashion. Concomitantly, as a result these expansions and truncations, the measure level is unstable with respect to both period and phase. It is not clear whether the meter really is 3/4, 5/8, or 7/8, even though 3/4 seems most likely. The metric upshot is that while we know what to do/what to expect (i.e., the *popevka* in 3/4), we don’t know exactly when to expect it.

4. Reich’s Metric Reluctance

In *Music for 18 Musicians* the meter becomes unmoored in a somewhat different fashion. Over the course of this piece, Reich gives us a wealth of metric information. But he remains curiously unassertive (at least in many places) as to what we should *do* with this information.

Consider first the opening measures (I will presume readers are aurally familiar with the piece; what follows does not depend on having a score). First, we hear a series of rapid pulses in the mallets. Next, these pulses are filled in, articulating note pairs, and then finally the entry of voices and reeds seems to imply quadruplets, but no higher level(s) of organization. The pulsing quadruplets continue, with different instrumental groups fading in and out of the musical texture.

These pulses are *very* fast. Indeed, the pulses and infills are much too fast to be heard as beats, 280ms and 140ms inter-onset intervals, respectively, as they are much shorter/faster than the 400ms threshold between beats and beat subdivisions (Paul Friaese’s *temps longs* and *temps court*—see Friaese 1982, as well as Clarke 1999). The quadruplets as a whole occur at 560ms inter-onset interval (i.e., 107 BPM). This is rate/tempo which invites *subjective rhythmization* (see, for example Woodrow 1909). That is, given an even/undifferentiated series of pulses we tend to hear them in groups (usually twos) and with a subjective sense of accent. This sense is wholly endogenous, and not guided by any phenomenal cues.

But this isn’t the whole story with Reich. For elsewhere in the piece (indeed, in most of the piece), larger and more complex rhythmic patterns (and their concomitant meters) emerge. Here is a diagram of the principal figure and its evolution from about 12:00 minutes into the piece:

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This figure organizes the initial pulse into threes, and not twos or fours (contra our presumptive subjective rhythmization). As at the opening, there is a process of metric infilling, though here it defines a higher-level of metrical organization, a compound quadruple measure that is effectively in “12/4.” Once the infill here is complete, not only is resulting passage metrically unambiguous, it is quite dense and complex, involving 5 levels of structure, from very rapid subdivision (140ms) to very long (3.2. second) measures. Later on in this section Reich stretches the figure even further (by the addition more continuous infills and harmonic counterpoint in the lower register), creating a very long “double measure” . . .

. . . And then it dissipates. Horlacher has aptly described this process in Reich in terms of metrical *emergence* and metrical *dissolution*:

Metrical emergence results when a . . . [passage] is initially accented in an irregular or sporadic way. In such a situation, metrical cues invite the listener to count, but their lack of consistency prohibits the confirmation of meter at one or more levels. As the music continues, however, by appearing periodically the cues may eventually articulate the missing level(s), leading us to experience a process of growth as the metrical identity of a repeated motive is enriched. In a metrical dissolution the process is reversed: established levels of counting eventually dissolve when metrical cues disappear or contradict one another, often returning a motive to its original form. (Horlacher 2000/2001, p. 271)

The larger effect metrical emergence and dissolution is that we abandon our normative metric inclinations. We suppress our reflexive tendency to group things in twos. We listen “in ones” instead (and notably, at the outset Reich notates his pulses in 1/4 meter). We learn to sit and wait for each pattern to appear, while listening closely to the surface immediately at hand for the subtle cues that come to the foreground of our attention.

5. The Aesthetics of Metric Ambiguity: Moving and Not Moving with the Music

Both Stravinsky and Reich create metric ambiguity in the passages I have just discussed. And it would be correct to say that in both cases, lower levels (beats and subdivisions) remain more-or-less stable, while higher levels are unclear. But as they achieve the higher level ambiguity in very different ways, our experience of metric ambiguity, and hence its aesthetic import, is very different in these two pieces.

Stravinsky gives us a series of metric cues that is self-contradictory—not “too much information,” exactly (though we would perhaps be happier with less, as we could then maintain

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a stable background periodicity/meter), though there is a sense of frantic re-iteration of the *Popevka* motive. It doesn't take long before we realize that this motive has become metrically unfixed, and so perhaps we should abandon our attempts to hear a stable 3/4 meter. Yet we keep trying, as the *Popevka* motive has such visceral metric associations. We want to move with this figure, but must hold ourselves back.

Recall van den Toorn's characterization of these hiccups described earlier, that of motivic displacement against a fixed metric framework. Van den Toorn is motivated not just by the music, but also by a desire to confront Theodor Adorno's characterization of Stravinsky's rhythmic practice. For Adorno, according to van den Toorn, believed that:

“The need for strictly held meters is made to imply mechanization and impersonality, while mechanization leads to ‘anti-humanism’ and a ‘collective’ voice that stands in opposition to the individual. . . The [literal] repetition of Stravinsky's themes is made to imply a similar identification with the ‘murderous’ collective’, as Adorno expressed it, with ‘agents of destruction’.” (2003, p. 288).

Yet as noted above, Adorno could not be farther from the truth here. The inhibition of entrainment inhibits the formation of the collective movement—we cannot move in lock step to this passage. Indeed, what is enacted before us is a social situation of conversational stumbles and interruptions. If anything it is the enactment of a ritual that is profoundly unsure of itself (more on this point in a moment).

So how do we (the audience) respond to Stravinsky's Hiccups? We cannot move along with them, though we can follow closely enough behind. And I also think that at the tempo Stravinsky is chosen—those very fast beats—we have a “cognitive compulsion” to keep after it. The result is that there is a sense of frustration here—as the *Popevka* figure is so enticingly assertive of 3/4, we keep hoping that “this time Stravinsky will stick with it.” But he doesn't. At some point, we realize that this listening strategy (whether conscious or not) just isn't going to work.

Once we realize this, we may then approach the metric hiccups in a different manner. As van den Toorn further notes:

“Experiences of metrical conflict in Stravinsky's music need not be the debilitating ones scorned by Adorno. As internalized meters are brought to the surface of consciousness in the most disruptive cases of displacement, a heightened sense of attention, engagement and suspense may ensue.” (2003, p. 299)

Even if our automatic, perceptual response is to keep hearing the *Popevka* motive as marking the onset of 3/4, on a higher level we recognize its metric unreliability. A game is being played here, and when we grasp this, the result here is not one of blows and shocks, but one of pleasure and delight, as we enjoy following along with these metric incongruities. I would further add that we may also delight in Stravinsky's capricious sense of meter (ritual enactment aside), and find in his compositional praxis the voice of an individual who refuses to become part of a collective, to be held rigidly within a fixed framework.

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I hasten to add that our delight in the play of these rhythmic/metric hiccups, and with Stravinsky's idiosyncratic rhythmic cleverness, is at odds with what is being enacted in the drama before us. This is fine if we choose to ignore what is being said and who is saying it, and while that seems to be a perverse way to approach a piece of dramatic vocal music, it is relatively common in contemporary music analysis. For the very same problems with entrainment that give rise to our frustration or delight are an integral part of the *mise en scene*. The chorus hesitates and stumbles, the soloists interrupt (violating conversational timing, in which entrainment normally guides a smooth process of turn-taking). What is portrayed is not a group that is singing in time together. What is Stravinsky's aim here? An attempt to capture the boisterous hustle and bustle before a wedding? Or social commentary on these ritual behaviors? (maybe both?).

I must add one more comment in light of the material from van den Toorn and Adorno quoted earlier. Adorno wrote about the collective voice that "stands in opposition to the individual." Such a voice requires individuals to lose themselves in a "murderous collective. But it isn't the "convulsive blows and shocks" of an irregular rhythm that lead to this; rather, the context that does this is one which readily engenders entrainment, especially on the higher levels of rhythmic/metric structure that direct coordinated social behaviors. While Adorno was writing about Stravinsky, he should have been worrying about Sousa. For what do Sousa's marches do? We forget that Sousa's marches—now the stuff of holiday parades and football games—were written in the context of military marches, a ritualized performance of the parade ground behaviors that McNeill remembered so well. "March music is essentially an ornamentation of a fixed, regular and repeated drum rhythm" (Schwandt, *NewGrove II*, "March"; online access). Sousa wrote for the U.S. Marine Band, a regimental ensemble. This music was never far from the parade ground and the training of soldiers.

Let us turn now to moving and not moving with Reich. At the beginning of *Music for 18 Musicians*, as in many of Reich's other works, we are enticed by the rhythmic sheen, and by the rapid pulsation, but don't know what more we should do. We know "something is going to happen" (the dynamic swells and swirls are a clear sign of that), but we don't know what. Unlike Stravinsky, we are not instantly pulled into the promise of entrainment.

So we wait. If initially we hear the pulses in twos, after a cycle or two of metric emergence and dissolution, we realize that our subjective rhythmization probably will not align with what is going to happen next (though it might). Rather than anticipating the arrival of a particular figure at a particular time, we simply await what will come next. This distinction between a future state which we *anticipate* actively versus one we merely *await* has been discussed by Clifton (1983) in the context of a phenomenological account of musical time. Clifton, borrowing terms from Husserl, develops the notion of temporal horizons, created by our protention (anticipation) of future in which we are actively engaged, and our retention of recent events still connected to the present. As noted above, absent a fully emerged figure, when listening to Reich our temporal horizons may shrink down to a very immediate present—we anticipate little, and retain little. There is a curious kind of passivity involved in listening to Reich, as we abandon broad anticipation and instead focus on the very local details of a repeated figure, of a crescendo, of shifting textures, and so on.

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When we do have a fully emerged pattern, Reich gives us many ways to move to it and with it. Reich is keenly aware of the metric effect of his music:

“If I compose music that is to use repeating patterns and is also to remain interesting I must build in rhythmic ambiguity to make it possible for the ear to hear a given pattern beginning and ending in different places depending on slight differences of accent and on how one listens” (from Reich, “Non-Western Music and the Western Composer,” *Analyse Musicale* 11 (1988): 49; quoted in Horlacher, *Intégral*, 14/15 2000/2001).

When a pattern has fully emerged, I may move with it, though its multiple affordances give a refracted sense of by mine as well as Reich’s own movement. Reich’s approach is one of metric openness, inviting the listener to hear the same passage in different ways. Reich, even more than Stravinsky, invites a sense of rhythmic delight (though, perhaps, without the frustration).

Reich’s metric reluctance, if I can put it that way, has a profound effect on the experience of the audience. While I can hear Reich in many ways, and while you and I may be sitting in the audience together when we listen to Reich, we are not necessarily hearing the same thing, and hence we are not engaging with it in the same way. If my response is no longer passive, it is solipsistic: I hear this myself, with my own personal sense of meter (my personal “subjective” rhythmization). I may or may not move with Reich, and when I do move, I may or may not move with others.

Robert Putnam, in his famous essay (and later book) on “bowling alone” talked about “the technological transformation of leisure:”

In the language of economics, electronic technology enables individual tastes to be satisfied more fully, but at the cost of the positive social externalities associated with more primitive forms of entertainment.

For Putnam, the primary culprit was television, though we might now include iPods, PDAs, and online entertainment (and maybe even “distance learning”). To the sociologist or social historian, Putnam is dealing with yet the latest aspect of the problem of modernity as it leads to the increasing isolation of the individual. Yet in many ways this is old news to composers and artists of the twentieth century who have struggled with the issues of individuality, of isolation, of the fragmentation of communities.

For the most part, when I have considered meter as entrainment, and analyzed various works under such a theoretical framework, I have addressed individual or “average” responses to the music, how a single listener can (or cannot) entrain to the music, and thus how she or he can (or cannot) move with it. This is in line with most critical and analytical accounts of music, in so far as they pay attention to the listener at all, as they almost never consider how the music will effect a group of listeners and the social dynamics of their collective aesthetic experience. But there is a collective aspect to our aesthetic experience of music (at least when we gather together to listen). Indeed, for many concert goers—whether it is classical music, jazz, rock, or whatever—having

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that collective experience is why we gather. And if the music allows (and encourages) us to move together as a group, there is a collective experience of time and motion.

But if we cannot move together, whatever the mechanism(s) that inhibit(s) our collective entrainment, we remain isolated. We hear the music as a collection of individuals rather than as a cohesive group. We may share an aesthetic experience together, but we will lack the sense of really “getting it” the same way, of having the music engender the same sorts of motional and emotional responses in each other. Ted Cohen, in his account of jokes, notes the importance of a shared affective response to humor, and what happens when one’s joke fails to get a laugh:

Jokes do not *compel* a sequel, not in the way, say, that arguments do. . . . When one's argument fails to move someone, when it fails to elicit a belief, one may always write this off to the benighted condition of the audience. They have been unable to follow the argument, or they are too ignorant to accept the premises, perhaps. But with a joke that has gone flat, all the teller is entitled to suppose is that his audience doesn't share his sense of humor. . . . All you can say of the fellow who doesn't laugh at your joke, at least all you can say when it has been established that he understands you, that he gets the joke, is that *he is not like you* (Cohen 1999, 25-26).

In the music of Stravinsky and Reich, music which I know and love, different modes of isolation are enacted. We “get the joke,” but may or may not have the same affective experience, and hence the same understanding. When we listen to these pieces we are moving, but we are not “keeping together in time.” Instead, we are “listening alone”. In some sense, perhaps, that is what Stravinsky and Reich are really about. And so maybe the metric ambiguities of Stravinsky and Reich aren’t so different after all.

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