

## A Knife All Blade: Deciding the Side Not to Take

By Arthur Kampela

My basic intention when conceiving a piece—besides the sonic embodiment of purely conceptual ideas—is to be able to access a wide spectrum of sonic materials, for I am interested in the whole gamut of sound, irrespective of its “raw” or “cultivated” aspects. Contrary to the notion of an *infinite* array of possibilities, where decisions would be lost due to lack of constraints, I would like to argue that when there is a struggle between materials to coexist and cohere, they naturally develop strategic priorities, and order themselves in such a way that the compositional flow is enhanced. This layering of gestural demands and compositional strategies highlights the music’s inner textures.

The string quartet excerpted below (see fig. 1), composed 1997–98, represents the following aspects of my compositional interests: extended techniques (timbres), micro-metric modulation (tempo/rhythm/form), motoric patterns (ergonomic considerations), and microtonality (harmonic/pitch spectrum). In this example, the all-pervading distribution of heterogeneous materials, (i.e., pitches, percussive sounds, glissandi, behind-the-bridge sonorities, harsh sounds, etc.) point to a context-oriented strategy, in which the very musical syntax is questioned while given. In other words, the piece attempts to consider the meaning of non-intervallic (strictly pitch) relationships, since it conveys elements of a “disruptive character,” extraneous to pitch-class reduction. I am suspicious of formulaic directions on “how to compose,” and I confront not only the musical syntax and its underlying grammar but also the instruments or tools that propel such grammar. Here, another given is questioned: the acceptance of a specific technique for playing any instrument, which underlies, obviously, choices that encode the traditional manipulation of the instrument in question. The instrument as a “donator” of sounds, and not simply as a preconceived tool of codified techniques/usage, accurately describes my way of reinterpreting the “received wisdom.” Note how in figure 1, m. 1 (first violin) the distribution of independent gestural routines for each hand creates the necessary conditions for a truly “motoric polyphony.” As we can see, the bow of the first violin (right hand) plays the E (first) string behind the bridge; the next gesture is done by the left hand alone (LH pizzicato) when plucking the G $\sharp$  on the first string; again, the RH intervenes, bowing the E string behind the bridge—this maneuvering, although part of the structural context, indicates, also, the purely motoric need of creating a rhythmic space for the next intervention of the left

Figure 1: String Quartet: *Uma Faca Só Lâmina* (1997-98), "C – Proposition II," mm. 1-2.

## C-Proposition II

$\text{♩} = 52$

*Handwritten musical score for String Quartet "Uma Faca Só Lâmina", "C-Proposition II". The score is for Violin I (Vln I), Violin II (Vln II), Viola (Vla.), and Cello. It includes performance instructions such as dynamics (f, mp, p, sfz, shp z), articulation (M.T., S.P., L.H., GLISS., F.P. POSS.), and specific techniques (ON TAIL PIECE ON STRAINING CLOTH, STRAIGHT BOW, HARSH, MOULIN, ORD. PIECE, SP. GLISS., C.I.L., H.P., D.S. P. MOLTO ALARO, HARSH (D.S.), S.P.E., GL.). The score also includes section numbers (I-V), rehearsal marks (L.H.), and a performance instruction: \* WITHOUT INTERRUPTING GLISS. PUTEN ACCO AFTER HEARING PART OF THE PRECEDING SHL.*

hand. Next comes a beak-shaped note that denotes a left-hand hammer-on of a  $D\sharp$  on the fourth string; immediately, the bow (RH)—for the first time—joins the  $D$  previously hammered and plays, subsequently, a “get-tato” (bouncing the bow) on the  $C\sharp$  (fourth string), while the left hand performs a descending glissando to  $C\flat$  on the same string.

The examined “cell” is a very clear example of my particular way of superimposing two distinct compositional strategies: on one side, purely structural considerations, which are more related to rhythmic envelopes and the distribution and connection of sound materials; on the other, the implied need to overcome instrumental constraints when accessing extended-techniques effects or new timbral nuances. This struggle between compositional hierarchies and instrumental *limitations* is a constant preoccupation of my music. The ergonomic considerations of instrumental capabilities coordinate the inner logic of my compositional choices. Therefore, the structural aspect of my pieces cannot be inferred from the surface elements only, even if we encounter traces of cohesive compositional designs in the placement of rhythms, timbres, and pitches. The underlying logic of my compositional text lies in its way of offering, in the very deployment of motoric/gestural patterns, the cohesive aspects of a polyrhythmic discourse, concomitantly with the more perceptible sonic hierarchies presented.

In figure 1 we can see a process of transference of gestural routines at work when the second violin repeats motoric patterns originated in the first violin. Notice that although the pitches and rhythms of this passage differ from those of the first violin’s, there is a maintenance of the motoric routines—with slight variations such as the introduction of a pause right before the LH hammer-on of the  $E\flat$  on the fourth string (instead of RH bowing the  $E$  string behind the bridge, as in the first violin) and the glissando of the  $D\sharp$  on the first string (instead of on the fourth, as in violin 1). The independence of the mechanical aspect in relation to the structural history of this passage confirms the conflicting superimposition of both layers of meaning, and shows the complementary characteristic of my music’s “lines of force.”

In another composition using similar principles (*Gestures*, for solo violin), we can see the way certain motoric cells undergo processes of retrogression, symmetry, and repetition with augmentation, among other variations (see fig. 2).

The expansion of the motoric-rhythmic premises incorporates the vocal/bodily resources of the interpreter. Such compositional “amplification” becomes an integral part of the distortion/distribution of timbral and motoric-rhythmic parameters (see fig. 3).

Figure 2: *Gestures*, for solo violin (1993), excerpt.

"Retrograde" of the motoric cell with rhythmic distortion and timbral redistribution of percussive effects (permutation)

The musical score for solo violin is annotated with various rhythmic and dynamic markings. A dashed box at the top indicates a section of the score. Annotations include:
 

- "(L. HAND) - SEMPRE..." at the top left.
- "percussive axis" with arrows pointing to specific notes.
- "RECCO" and "BENV. ACTU" markings.
- Rhythmic values such as 7/4, 5/4, 3/4, and 4/4.
- Dynamic markings like *sfz*, *mf*, and *pp*.

"Symmetry" of internal rhythm inverting around a percussive axis (done by the left hand) changing position of percussive effects

"Repetition" with rhythmic displacement of the motoric-rhythmic cell

Figure 3: *Gestures* vocal sounds.

Consonantal and vowel sounds

The musical score for vocal sounds is annotated with various rhythmic and dynamic markings. Annotations include:
 

- "brev. articolato" above the notes.
- "[voice]" and "ps" markings.
- Rhythmic values such as 5/4, 4/4, 6/4, 4/3, and 3/4.
- Dynamic markings like *mf*, *ff*, *pp*, and *f*.
- "Click tongue" annotation above a specific note.

This *physical* extension of my pieces, as they project beyond the mere instrumental mechanics to involve the performer as a whole—his/her body as a donator of sounds—is a fundamental aspect of my understanding of the ambiguities between gesture and sound. The re-channeling of energy spent in performing can acquire the status of “structural” cell if we view the bodily “reaction” to the music being played as a complementary detail of its utterance. A scream, a click-tongue, a hum, the tapping of the feet, etc., can be enlisted in the contrapuntal presentation of the sonic materials. The use of a microtonal scale (with *its* “tight” melodic intervals) is an instance of the struggle being staged between gestural and structural strategies, since the microtones (a part of the precompositional structure) carry the sense of a contour being “bent” by motoric imperatives. The nonthematic melodic material is but a trace of an attempted discourse, suggesting, more than denoting, a final text with obvious plotted correspondences (see figs. 4a and 4b; notice the similar motoric patterns used in both passages, and how they affect the melodic contour/profile).

Figures 4a and 4b present functional similitude with that of the “synonyms” in spoken language since they imply equivalent states for the sonic objects deployed. As we can see, they are not identical, but resemble each other like distant beaches on faraway shores that are geographically different but preserve the borderline structures witnessed between sea and sand/stones.

Figure 4a: *Quimbanda*, for electric guitar (1998–99), mm. 1–6 after introduction.

The musical score for Figure 4a is presented in two systems. The first system, measures 1-6, begins with a circled 'A' in a box. It features a melodic line with various microtonal intervals and dynamic markings: *mp*, *sfz*, *smpz*, *smfz*, and *f*. Annotations include "47 dual detune" (with a tempo marking of ♩.77), "7:4", "7:2", "5:4", "7:4 vib. molto", and "48 dig. dist. 1 punchy". The second system, measures 7-11, includes a "bend 1/4 tone" instruction, a "9:8" interval, and a "c.s." (clean sound) instruction. It also features "ord. or any clean sound" and "poco reverb" markings. Dynamics markings include *p*, *smfz*, *smpz*, *f*, and *sfz*. The score concludes with a circled "6".

Figure 4b: *Quimbanda*, mm. 167–74.

**B**

167 vib. molto  
6:5 4:5  
mp sfz smfz f sub. mp ff mf

170 7:5 5:3 7:5  
p sub. f p smfz p

173 7:6 9:8 7:4 4:3 7:5 5:4 3:1 7:5 3  
smfz f pp p mf f mp

Notice how the intervallic correspondences are replaced by the ever-changing presentations/“partitions” of similar sonic contours whose functional aspects are simply instanced rather than being thoroughly contextual. What is preserved are the motoric patterns, functioning as a kind of “thematic” material, underlying the distribution of new rhythmic strata. In figure 4b we can observe certain peculiar “modulatory” moves, in which intervallic correspondences are “sacrificed” for ergonomic cohesiveness. Note that I tried to keep timbral and contour resemblance between both sections, changing the pitch and rhythmic presentations while maintaining the intervallic integrity of certain open strings (whose pitches aren’t changed). This counter-rhetoric strategy of contour acts—for the performer and (I hope) for the listener—as a type of perceptual “synonym” of materials previously heard.

The same procedure is used when overlapping the polyphonic strands of musical material, thereby generating the harmonic signature of a piece. In my String Quartet, I employed this technique of “restating” materials formerly presented, preserving their ergonomic/motoric routines. Many times I worked “retroactively,” selecting chunks of the material from either past *or* future moments of the composition, in order to reapply their

motoric profile at a given time. As soon as that “phrase” or “cell” was respelled, I went to another phrase, re-sculpting it rhythmically, and sometimes adding small variations to the motoric profile. The String Quartet is characterized by constant interruption: the collision of many possible “routes” of musical presentation rather than the development of a linear discourse. Hence, the musical flow attempts to reassert itself, while coordinating the music’s textural bandwidth. The harmonic output stands, therefore, for the superimposition of radically different musical objects that sometimes overlap, acquiring a sudden degree of functionality as they deploy—under diverse metric specifications—similar timbral collections. The perceptual aspect of such a “charged” sonic spectrum is “fattened” by a lack of harmonic referential; thus, many times we have the impression of hearing on a *diagonal* axis, where musical objects seem to accumulate and “resolve” by entropic bursts. Ferneyhough (1993: 23) mentions the “time lag” experienced by listeners of his music when “provisionally erected frameworks are continually being violated by current events which invade them.” This “feeling of being pushed beyond the normal threshold of temporal tolerance,” where time is “bent,” refers not only to our cognitive difficulty in grasping simultaneities erased by an inexorable flow of new information, but points to a spatial or static aspect of time in which timbral deviations are heard as pertaining to the same continuum, as in a picture. In figure 5, the same material is reprocessed to display novel harmonic intersections with recurring horizontal elements previously shown. At the “D-Variation” section, the first violin repeats, literally, what was done by the second violin during the “C-Proposition II” (see fig. 1); the second violin repeats the first violin from m. 20 (not shown) “backwards” (not retrograde!), grouping chunks of the motoric line but at this time employing distortional rhythmic strategies; the viola repeats the cello line of “Proposition II” (fig. 1), interspersing small variations and distinct rhythmic profiles; the cello, in turn, uses just a small amount of the viola material found in m. 20, and goes “backward,” transforming its rhythm and introducing new sonic elements.

The same attempt at coordinating the mechanical and the structural axes of my compositions is found in my series *Percussion Studies*, for solo guitar (1990–97). In figure 6, extracted from *Percussion Study II*, an open E at the first string is plucked by the right hand; without interruption, the left hand alone in a “ligado-like” movement strikes an E at the sixth string. (*Ligado* is a Spanish word common in guitar literature, which means “hammer-on” or “hit the string with the left hand alone.”) Again the right hand intervenes with three distinct percussive effects, hitting the lower strings with the thumb and, with outstretched hand, the bottom and top of the soundboard, which gives time for the left hand alone to “hammer-on/hit” the E

Figure 5: String Quartet, "D-Variation": "motoric recapitulation," mm. 114–17.

# D-Variation

[♩ = 56]

114

f —  $sh/z$  —  $sfz$   $sh/z$  —  $sub$   $f$   $sfz$   $p$  —  $ff$

114

$sfz$   $sh/z$  >  $f$  —  $sub$   $p$  —  $f$

114

(P) —  $CRESL... f$  POSS SEMPRE

114

114

START: PPP; [p ~ ff] —> Ad. Lib.

SUBITO VERTICAL  
BLISS, TOWARDS TAILPIECE

NORMAL BOWING DIRECTION  
B. PRESS SEMPRE

CRESL...

COL LEGNO: VERTICAL TREMOL, FAINTLY PITCHED.



Figure 5 (cont.)

This figure displays a handwritten musical score across five systems. The notation includes various dynamics such as *ppp*, *f*, *mp*, *pp*, and *pppp*. Performance markings include accents, slurs, and specific instructions like "ENTER ARCO INTERFERENTIALLY" and "MOLTO SUL PONT." Fingerings and bowings are indicated with numbers and letters. The score is marked with measure numbers 115 and 116. The notation is dense, with many notes and rests, and includes some unusual markings like "HARRER" and "KREWER".

Figure 5 (cont.)

The image displays a handwritten musical score for Figure 5 (cont.), consisting of five systems of staves. The notation is complex, featuring various musical symbols, dynamics, and performance instructions.

- System 1:** Starts with a treble clef and a key signature of one sharp (F#). It includes a first ending bracket labeled "(1)" with a measure of 3/4. A second ending bracket labeled "(2)" is marked "SEMI-TACH." and contains a measure of 7/4. The tempo marking "L.H." is present. Dynamics include *sfz* and *MP*. A performance instruction "f" is written below the staff.
- System 2:** Features a treble clef and a key signature of one sharp. It includes a first ending bracket labeled "(3)" with a measure of 7/4. A second ending bracket labeled "(4)" is marked "SEMI-TACH." and contains a measure of 7/4. Dynamics include *sfz* and *MP*. A performance instruction "f" is written below the staff.
- System 3:** Features a treble clef and a key signature of one sharp. It includes a first ending bracket labeled "(5)" with a measure of 7/4. A second ending bracket labeled "(6)" is marked "SEMI-TACH." and contains a measure of 7/4. Dynamics include *sfz* and *MP*. A performance instruction "f" is written below the staff.
- System 4:** Features a treble clef and a key signature of one sharp. It includes a first ending bracket labeled "(7)" with a measure of 7/4. A second ending bracket labeled "(8)" is marked "SEMI-TACH." and contains a measure of 7/4. Dynamics include *sfz* and *MP*. A performance instruction "f" is written below the staff.
- System 5:** Features a treble clef and a key signature of one sharp. It includes a first ending bracket labeled "(9)" with a measure of 7/4. A second ending bracket labeled "(10)" is marked "SEMI-TACH." and contains a measure of 7/4. Dynamics include *sfz* and *MP*. A performance instruction "f" is written below the staff.

The score is characterized by its dense notation, including many accidentals, slurs, and dynamic markings. The use of first and second endings suggests a complex, multi-measure structure. The tempo markings "L.H." and "SEMI-TACH." indicate specific performance characteristics. The dynamics range from *sfz* (sforzando) to *MP* (mezzo-piano).

(twelfth fret) at the sixth string; this note is subsequently plucked by the thumb in a Bartók-like pizzicato, and immediately descends toward the low F# in a glissando. (Although the previous description applies to bare-handed techniques, it would also be possible to fit external objects—like a glass or a pencil, a tuning fork or a spoon—into the logic of the gestures, enhancing the gamut of timbral distortions.)

In the *Percussion Studies* series, I wanted to create an idiom that is suitable to the guitar's gestural domain as well as compatible with specific compositional demands. Therefore, in order to switch from a note to any percussive effect and back to a note, it was imperative for the effect to be easily accessible, avoiding, as much as possible, gestural awkwardness. One of my chief aims was to free the hands from each other, allowing a "physically polyphonic" approach to the instrument. Here, a set of possible effects or notes played with just one of the hands might come into the foreground. In that way, it would be possible to create an agile and interchangeable set of effects for each hand.

The obvious advantage of freeing the hands is that technical impossibilities of traditional playing technique (like wide and fast jumps) are easily managed. We could therefore build a map that would function as a practical, if somewhat arbitrary, mechanism to enhance the composer's ability to foresee the next gestural step. If we stipulate a series of right- and left-hand movements that are independent of each other, we can move from one type of playing to the next without interrupting the piece's flow. Figures 7a–7k constitute a brief, descriptive guide to some of the effects that I call the "Tapping Technique"—independent effects for the right and left hands.

Considering the musical material "from scratch" is my characteristic way of establishing meaning for the elements of discourse and of finding the necessary friction to inaugurate a language that is ultimately the carrier of

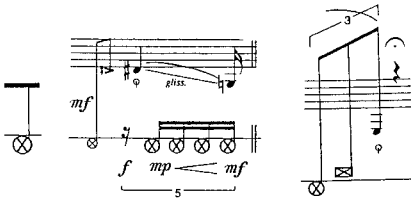
Figure 6: *Percussion Study II*, for solo guitar (1993), m. 24.

The musical score for Figure 6, m. 24, is written on a single staff in treble clef. The piece begins with a 4/4 time signature and a dynamic marking of *f*. The notation includes various rhythmic values and techniques:

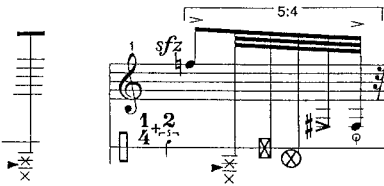
- Measures 1-3:** Labeled "ben marcato" with a 3:4 ratio. The first measure contains a quarter note, followed by two eighth notes. The second measure contains a quarter note, followed by two eighth notes. The third measure contains a quarter note, followed by two eighth notes.
- Measures 4-5:** Labeled "gliss." with a dynamic marking of *sfz*. The notation shows a glissando from a higher note to a lower one.
- Measures 6-8:** Labeled "cantando" with a 3:2 ratio. The notation shows a series of notes with a dynamic marking of *mfz*.
- Measures 9-10:** Labeled "secco" with a 5:3 ratio. The notation shows a series of notes with a dynamic marking of *mfz*.
- Measures 11-12:** Labeled "9:8". The notation shows a series of notes with a dynamic marking of *mfz*.

Below the staff, there are several circled numbers (1, 6, 2, 3) and arrows indicating specific techniques or effects. The score is annotated with various ratios and dynamic markings, reflecting the complex and experimental nature of the piece.

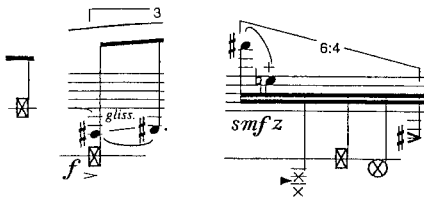
**Figure 7a:** Right-hand thumb: Strike the soundboard above the sound hole with the side (bone) of the thumb. This action should generally be done above the sound hole.



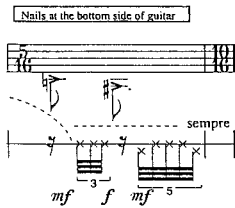
**Figure 7b:** Right-hand thumb/metallic: Strike both E and A (bass) strings against the frets with the right-hand thumb. This action should be done between the end of the neck and the outer circle of the sound hole region.



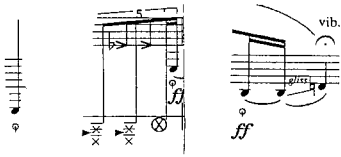
**Figure 7c:** Outstretched right hand: Strike the soundboard in its lower part, between the sound hole and bridge, with the right hand.



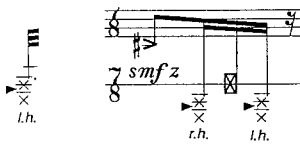
**Figure 7d:** Right-hand nails: Nail attacks (arpeggio-like). The thumb plays at the lower part of the soundboard, close to the bottom side.



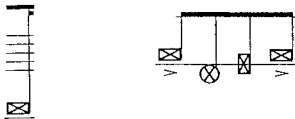
**Figure 7e:** Bartók thumb pizzicato (right hand): Pull the E (bass) string with the thumb alone. Do not use index finger.



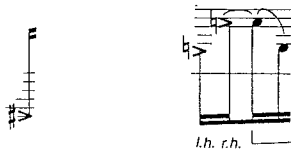
**Figure 7f:** Left-hand fingers/metallic. Strike both E and A (bass) strings against the frets with the fingers of the left hand.



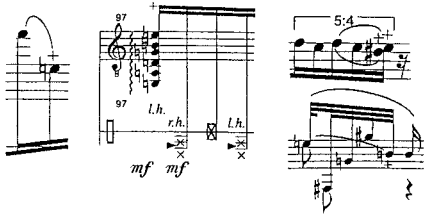
**Figure 7g:** Left-hand “slap” below the neck: Strike the soundboard below the neck. There is not a specific point to hit, just an indicated area.



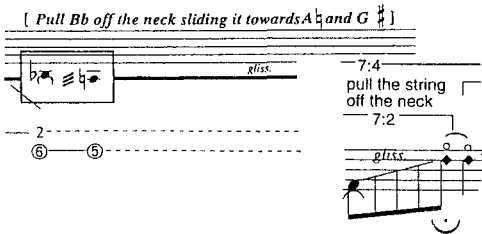
**Figure 7h:** Left-hand ligado/hammering: The “ligado” (hammering or stroke) is done by hammering the string(s) without the right hand plucking it at the beginning of the sound.



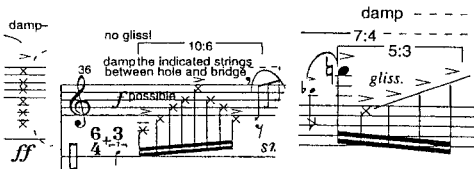
**Figure 7i:** Left-hand pizzicato: Pluck the string(s) as the right hand does (generally on open string(s) or an open chord). This left-hand gesture uses the same symbol as the left-hand pizzicato for violin.



**Figure 7j:** Left-hand pulling of string off the neck/buzz-like sound: Pull the E2 (bass) or E4 (treble) string off the neck at a specified pitch region, sliding it (glissando), or simply revolving around a specific region of the neck.



**Figure 7k:** Left-hand damping (mute): Hold (mute) the strings between soundhole and bridge while arpeggiating or playing the indicated strings with the right hand.



my emotions/reactions. The compromised choices that any composer has to make are engraved on the “a priori of musical terms,” be it structural resiliency, patterns of instrumental connection, technical impossibilities, etc. This simply means that in portraying our supposedly “free flow” imagination, we are in truth conforming to parameters of “obstructed” freedom. Even the five-line staff doesn’t escape the obvious assumption of staging a promising narrative, however constrained by the  $x$ - and  $y$ -axes of temporal/harmonic sequencing.

### Micro-Metric Modulation: An Introduction

As I developed my research on timbre, I noticed that the mere appropriation of a particular semantic field composed of pitches and noises wouldn’t be enough to optimize their differences and similarities. In that sense, I tried to impose complex rhythmic grids on the materials employed (chains of tuplets, compression and enlargement of bars with non-integral/fractional meters,<sup>1</sup> sudden changes of metronome markings, etc.) in order to obtain structural filters or “sieves” that would “rotate” and bring to the surface the elements of the musical discourse at privileged moments of the compositional flux. This way I could reinvest “used” sonic objects with a new iconic potential, making them re-emerge under a multiplicity of metric speeds.

Based on commutative and associative properties<sup>2</sup> that coordinate the unfolding of rhythmic materials, the micro-metric modulation I’ve developed furthers Elliott Carter’s work on metric modulation. It extends the scope of his rhythmic practice insofar as it compresses Carter’s metric modulation into a “micro-level” of the beat’s possible subdivisions.<sup>3</sup>

The concept of “continuation” (here implying rhythmic equivalency between different metric configurations or non-integral ratios) is crucial if we want to develop a theory of micro-metric modulation. In order to link a rhythmic figure (or previous ratio) to a new one, it is necessary to have equivalent rhythmic speeds on both sides of the ratio chain. Translated to music, we have the following example:

Figure 8



Here, both ratios exchange (top and bottom) positions and the speed resulting from the superimposition of [5:4 - 6:4] ratios (left) is the same as that of the superimposition of [6:4 - 5:4] ratios (right).

Math proof: If MM = 60, for the  $\frac{4}{5}\frac{4}{6}$  order position (left-most ratio, fig. 8), we have:

$$\frac{60.5}{4} = \frac{300}{4} = 75 \times 6 = \text{MM } 450;$$

for the  $\frac{4}{6}\frac{4}{5}$  order position (right ratio, fig. 8), we have:

$$\frac{60.6}{4} = \frac{360}{4} = 90 \times 5 = \text{MM } 450 \text{ (same as above).}$$

Fractional representation:

$$\text{a) } \frac{4}{5}\frac{4}{6} = \frac{2}{5}\frac{4}{3} = \frac{8}{15} \quad \text{b) } \frac{4}{6}\frac{4}{5} = \frac{4}{3}\frac{2}{5} = \frac{8}{15}$$

In the above example, we set our pulse or metronome marking to quarter note = MM 60. Then, each of the quintuplet sixteenths (see far left, fig. 8) will have a speed of MM 300, since they are five times faster than the main beat. Subsequently, we take four quintuplet sixteenths out of these five as our new time span for further subdivision. This time span (a “contracted quarter note”) is obtained by subdividing MM 300 by four, setting the speed of this new “quarter note” to MM 75. Now, we simply multiply 75 by 6 in order to reach the final speed of the contracted sixteenth note (or subratio), which is MM 450. If we repeat this operation starting instead with the [6:4 - 5:4] ratio order (at the right, fig. 8), the result of the final speed of the contracted sixteenth note (or subratio) will be the same, MM 450 proving the speed equivalency between both ratios. The second (fractional) proof points to a limit in the subdivision process where numerators and denominators are relatively prime. It reduces the ratio’s configuration to its “most-condensed” fractional form, the  $\frac{8}{15}$  fraction. This fraction shows the maximum speed available for those specific ratios. Therefore it is possible—through factorization—to write either a nested tuplet ratio (having, sometimes, as many as four levels of subratios) or one unique ratio with only one level of subratio. Thus, a [5:4 - 3:2] two-level ratio is rhythmically equivalent to a [30:16] one-level ratio.

Let us briefly consider some rhythmic possibilities opened up by the micro-metric modulatory system. Starting with the notion of “prolongation,” in which rhythms that pertain to different rhythmic configurations



present a common denominator speed, we can think of subdivisions occurring halfway between ratios that belong to distinct metric hierarchies. As shown in figure 9, once we are aware of the rhythmic equivalence between both subratios [5:4 - subratio 3:2] [6:4 - subratio 5:4], we can interpolate any new subdivision (in this case a 7:5 ratio). In fig. 9 both ratios are under the same metronome marking. Figure 10 shows the same operation between complementary ratios under distinct metronome markings.

As we can see in fig. 10, the 7:5 ratio “fills” the 5/16 bar with a faster stream of non-integral sixteenth notes. Hence, an equivalency of speeds between sixteenth notes (non-integral and regular) on both sides of the metronome markings is managed. As with the previous example, we can create a new layer of subdivision midway between both ratios’ metric frames. The (arbitrary) 11:6 ratio starts its “run” on a stream of non-integral sixteenth notes crossing to the other side where the sixteenths are regular under a new metronome marking (MM 91). The ratio-crossing illustrated above establishes new insights into possible rhythmic strategies for linking dissimilar configurations or metric tempos.

In my piece for solo harp, *Phalanges*, derived entirely from micro-metric modulation principles, I’ve used fractional bars to impose a cleavage on normal temporal expectations, and to redirect the sonic discourse to rhythmic impasses (for example, the crossing of subratios between top metric configurations and the shrinking of top ratios in order to be able

Figure 9



Figure 10

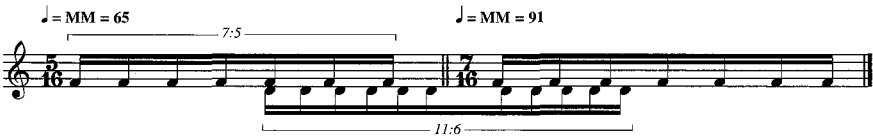


Figure 11: *Phalanges*, for solo harp (1995), beginning: Crossing of subratio [8:3] between top metric configurations.

to use the subratio formed underneath the figure as the new rhythmic bridge). Note the shrinking of the third top ratio at m. 2. (The [8:3] subratio functions as a rhythmic bridge to the new metric configuration at m. 3.)

\* \* \*

Between creating *with* sound(s) and creating *within/from* sound(s), lies a deep change in philosophic perspective for the creative act. If the first category unquestionably controls the rhetorical patterns, the maneuvering and coherence of musical strata, the second questions the very existence of the language itself, finding its elements only when deconstructing the basis of a given discourse. On the threshold of a language resides language's resiliency, which means that the archetypes that configure the idiomatic elements of that language postulate themselves outside it. For

example, while the harmonic field is seen as the aggregate of simultaneous aural frequencies, it can also be interpreted, archetypally, as a “field of simultaneities,” where heterogeneous materials (not necessarily sonic) could coexist. It is very common, when referring to passages in a composition, to utilize terms that are beyond the scope of the materials deployed. We often think in terms of “texture” (a fabric metaphor) or “densities” or “transparencies” or “rugosity” or “points” (and even—when lacking more immediate definitions—something like “nauseating colors,” etc.) in order to apply such categories to a language that, *a priori*, does not contain those elements.

The wish to operate with the whole of the sensory spectrum is a strong determinant of my particular way of conceiving the compositional narrative. For instance, frequently, when composing, I long for the entrance of a “velvety material,” or the “sudden sensation of the wind blowing, for a second, against my face,” or a color, a shape, a temperature, a smell, etc., instead of a note. I wish I could dispose those elements as part of my compositional palette, controlled by a very fine temporal/rhythmic filter. This notion of “sculptural composing,” where “frequencies” of plural fields could coexist, points to a desire of expression that wants to *surpass* the very homogeneity of the aural field. Such a compositional attempt to envelop the linearity of the aural field with a synaesthetic, total-cognitive approach, relates to the brain’s neural networks that interlink phenomena of diverse cognitive natures. In music, a nondenotative medium, the correspondence between signifier and signified is nonexistent. The “contrast” between meaning and signifier found in the spoken/written language cannot be imposed on music, a medium that is notoriously self-referential. Therefore, my question as a composer is invested with the frustrating awareness that the medium is deaf for abstractions, implying here the obvious impossibility of music being “heard” as a metaphor, whose hidden meaning could be accessed through something other than surface “noise.” However, the network of sensations is also present in the “history” (or perception) of aural correspondences. For instance, the white noise (of the sea? of the wind?) can evoke analogies with “space,” “openness,” “awareness,” “cleanliness,” “asceticism,” “fever,” “foam,” “fluff,” etc., because this sound is pregnant with experiential associations congenial to the brain’s/mind’s constructs. The primordial fear, the feeling of hunger, the sense of nostalgia, the experience of risk, the need to evacuate, and so on, are part of our associative history, are proponents of our perceptive trajectory. When we imagine a stone, for example, we conjure up the very sense of “physicality” that the presence of the object provokes in us. In this effort for *reliability*, which *pronounces* the sensation of the object, resides a perceptual bridge between sensory channels of distinct levels. The

Figure 12: *Layers for a Transparent Orgasm*, for solo horn (1990–91), beginning: “bubble-like” effect.

SECTION A

Bubble-like sound: AS CONTINUOUS AS POSSIBLE ... SEMPRE ... (AS SMOOTHLY AS POSSIBLE)

1.2\* (TRANSITION I)

40"/30" APPROX.

GRAPHIC SUGGESTION OF RHYTHMIC IMPULSES  
 (1.1\*) DYNAMIC RANGE FOR THE SEQUENCE  
 (1.2\*) GRAPHIC SUGGESTION OF DYNAMIC ENVELOPE

INTERFERE INTENSIFY TO THE  
 (DOUBLE-TONGUE) - ALWAYS  
 BUBBLE-LIKE SOUND! - (DO NOT FOCUS THE PITCH)

ADD FEW QUASI-DEFINITE PITCHES

(TRANSITION II)

TRANSITION III

[PPPP~PP]

[PPP~mp]

11.5"

The image shows a handwritten musical score for a solo horn. It consists of two staves. The top staff is labeled 'SECTION A' and contains a series of notes with a 'bubble-like' sound effect. The bottom staff is labeled 'TRANSITION I' and contains a series of notes with a 'bubble-like' sound effect. The score includes various annotations such as 'BUBBLE-LIKE SOUND: AS CONTINUOUS AS POSSIBLE ... SEMPRE ... (AS SMOOTHLY AS POSSIBLE)', 'INTERFERE INTENSIFY TO THE (DOUBLE-TONGUE) - ALWAYS', 'BUBBLE-LIKE SOUND! - (DO NOT FOCUS THE PITCH)', 'ADD FEW QUASI-DEFINITE PITCHES', and dynamic markings like '[PPPP~PP]' and '[PPP~mp]'. There are also time markings like '40"/30" APPROX.' and '11.5"'. The score is written in ink on a grid background.

hardness of the stone is but one aspect of its *presence*. Such an archetypal quality tends to develop a kind of “rhizomatous” chain of sensory proximity, such as “compactness,” “economy,” “brevity,” “crispness,” etc., each of which, although pointing to more distant “synonyms,” tend to preserve, somehow, the original “puncture” or “traces” of the original object. If, in musical terms, the above string of synonyms cannot be perceived as metaphors of narratives, they can, through timbral polarizations, reengage *bodily* associations, “tricking” it with “pre-semantic” sensory qualities. On this basis, it is possible to reconstruct a discourse based not solely on the meaning of its utterances, but on the “irritability” of the senses (through a timbral chain of perceptive “synonyms”), where sound (“hot” sounds, “thin” sounds, “wet” sounds, “transparent” sounds, etc.), far from describing anything, simply *imply, hint, suggest, point*—on the interior of purely aural trajectories—to a prior “sensory gestalt.” I like to link or “spread” most of my auditory and visual sensations to complementary ones, embedding them with a tactile, olfactory, and even, sometimes, a gustatory gestalt.

At the beginning of *Layers for a Transparent Orgasm* (see fig. 12), I tried to portray a “gaseous,” “bubbling,” “wet,” “hot,” “opaque” atmosphere, in which the sonic elements would be “asphyxiated” by each other’s interruptions. The first effect of the piece, which I’ve called the “bubble-effect,” is executed through the constant interruption of the air column by the performer’s tongue, creating this “bubbling, pitchless flap.” This effect is a very good representative of my compositional intentions. Although I had a programmatic narrative in mind, showing the primitive aspects of an ancient Earth, I tried to evoke this “imaginary landscape” through purely timbral “frictions.” I wanted to link the sounds heard, with the previously mentioned sensory qualities, creating some kind of “gestaltian common ground” between them. We know that in the domain of pure sound only the struggle between aural dichotomies is to be heard, or, if I may, “felt,” or “tasted.” So in order to “reenact” an immediate “archetypal feeling,” I had to work with very pronounced textural/timbral categories. Using a wealth of extended techniques blending with the performer’s voice, a truly polyrhythmic/polytimbral discourse was created. In the constant “fight” of the materials to be articulated, the very notion of time could be seen as “enveloped” by the rapid coordination of sounds with different “weight” and profile. The “exploded” surface of heterogeneous materials struggling to interact also brings forth, in my opinion, an analogy with the “tactile sensory experience,” filling the music with this “quasi-sculptural” character—meaning that the sounds produced by the horn player (her voice and her blowing sounds) present a clear dichotomy of emission, charging perception with sudden dynamic, timbral and rhythmic “bursts” or “peaks.”

Therefore, the freedom to think within sound repositis the elements of the discourse as a phenomenological platform for the imagination, unconstrained by the formative elements of a given language.

Although multimedia experiments tend to blur the boundaries of distinct expressive mediums, they fail to connect those mediums precisely because of the natural resistance/“degrees of resiliency” of the materials involved. Different aesthetic mediums or materials, like paint and sound, do not “bridge” naturally, for they lack a common grammar to sustain perceptive and formal cohesiveness. The mere superimposition of materials of heterogeneous fields—e.g., while a video is shown, one artist paints, a dance happens, somebody plays synthesizer; or, the cumulative and anti-functional piling up of “arts” on the opera stage, with its ridiculous pretension of artistic *Weltanschauung*—does not guarantee the appearance of a new art form, but only the pastiche of unprepared, ill-layered, aestheticism. Nonetheless, I believe that the present impasse of the artistic enterprise—with its compartmentalized “disciplines”—can only be solved

Figure 13: Layers for a Transparent Orgasm, page 7.

Handwritten musical score for "Layers for a Transparent Orgasm, page 7". The score is written on three systems of staves, each with a vocal line and a piano accompaniment. The notation is dense with annotations, including dynamics (mp, mf, f, sfz), articulation (acc, staccato), and performance instructions. A box in the first system explains that "PITCHES ABOVE INDICATE THE PUBLISHED SCORE FOR THE WORDS". A second system includes a box for "VOICE + HORN: MEDIUM-LOW REGISTERS". A third system includes a box for "AD LIB... SPOKEN NATURALLY, BUT NOT TOO SLOW". The score concludes with a box for "NORMANVILLE MUSIC INSTITUTE".

Annotations in the first system include: (MP = f), MOLTO STACCATO, and a box: [PITCHES ABOVE INDICATE THE PUBLISHED SCORE FOR THE WORDS].

Annotations in the second system include: (voice = horn) as max! ... (scream), WHEN YOU HAVE THIS... HAVE THIS KIND OF..., and a box: [VOICE + HORN: MEDIUM-LOW REGISTERS].

Annotations in the third system include: poco LENTO... legato possibile, SUB. FAST, and a box: [AD LIB... SPOKEN NATURALLY, BUT NOT TOO SLOW].

Final annotation: [NORMANVILLE MUSIC INSTITUTE]

through the appearance of new art forms that embrace, from the start, the unification of our perceptive capacity. Thus, it is necessary to build a “corpus of knowledge” (cognitive, technological, etc.) in order to understand the functional “attachment” of elements from different perceptive fields and the corresponding sensory “reaction” to them. Only then, can we establish the seeds of a new “grammar” and, consequently, new art forms or new “art formats.” For example, how can a certain color be transformed or “transferred” into sound spectra or acquire a sudden olfactory “radiance” while maintaining some kind of archetypal association with its original properties? How can we infuse perception with new associative relationships generated by “sensory bridges” that link dichotomous mediums, that won’t be noticed as dissociated, merely sequential events, but as part of a kind of “sculptural perceptive experience” unfolding in time (or outside of it)? Submitting materials of heterogeneous fields (possessing diverse “hermeneutic” weights) to techniques of “condensation,” “saturation,” “metric displacements” (among many others) seems to me to be one of the many possible and valid steps we can take to further our creative enterprises.

### **Closing Remarks**

Finally, I would like to offer some comments on my music’s characteristics. The artistic enterprise comprises both joy and frustration. Joy is present because of the sudden capability of a given system to embody self-sufficiency, to be able to translate a conceptual “absolute” into the (concrete) terms of its own language (i.e., to be able to bridge, however pale the resulting “artifact,” the medium to the concept, while transcending the medium’s limitations). The frustration is due to the inevitable failure of a specific medium to be the carrier of the creative individual’s expression. It hints at the fact that the chosen art form doesn’t possess the means to accommodate the individual as a whole, because it is just that: an art form. Being peripheral to yourself while trying to define who you are is a tough, uncomfortable, position. For me, this is reflected in my way of dealing with my music. I see creative acts as nothing less than strategies of evasion and refusal of, and defection from, the very elements that define the foundation of any expressive medium. It is exactly at the moment that one enhances a medium’s entropic potential (when “refusing” to subscribe to the very elements that constitute it) that the medium starts to “regenerate” itself, regaining a *healthier* “profile.” This “invitation” for a given system to renew itself, to act against a background of accepted techniques and aesthetic polarizations is at the root of any authentic artistic enterprise. If the artist is a representative of social “misprint,” all art can be viewed as sociological “fungus,” which grows and feeds in the cracks

between regulated/accepted societal mechanisms. Art is at the end of a behavioral chain, where *dis-satisfaction* leads to a desire to *blur* social boundaries imposed on us from outside and from within. Because of the difficulty of articulating new social meanings with the unyielding fabric of social structures/"scriptures," we are more likely to overcome such stressful constraints when "transposing" them to a more flexible medium. Therefore, I like to think that one of the ultimate purposes of art is to rehearse a multiplicity of "states of affairs," not possible or not yet represented in the rest of contemporary society. Its essence is Dionysian and conflicted—whether showing calm or "blasted" surfaces—since it acquires potency only at the point of rupture with its own grammar. Thus, complexity is not a contextual platform, allowed to exist according to our choices, but is the very precondition of artistic speculation.

When, in my music, I impose methodological grids—through the use of "ergonomic" filters, timbral sieves, complex rhythms, etc.—mirroring the complex nature of the sonic event, it is less to "mimic" its multidimensional nature than to reveal the presumptuous fallacy of the "finished" text. I always deeply mistrust a complete anything, since I understand that the "noises of the sea" or a "dog's bark," for instance, are but prolongations of the experiential self "shooting" through modes or states of being. Composition, in this context, is seen as an accumulation of "frequential sediments," a place of "charged mistrust," a trace—and it is most exposed when it gravitates to the threshold of its own "opacity." What I am articulating is a moral stance that, analogous to my music's procedures, stresses that the artistic project should be a withdrawing of the ego, an attempt to bring forth what in us is genuine commitment. (My attitude parallels the discipline exhibited by the Buddhist monks who make the ultra-detailed sand mandalas that are immediately destroyed as soon as they are finished—a dictum that might be stated as something like, "perfect the self, reject the medium.") Hence, my present disregard for any historic dissemblance, with its petty curricular deployment of "successful" personalities and other superlative irrelevancies, which is detrimental to distinct (less successful or simply different?) accomplishments. I am looking for a self-sufficient trajectory for my life, beyond historical/hysterical idiosyncrasies. I don't care to belong to any generational "-ism," although I know that I'm not beyond "demarcation." So, why this primary shyness or aesthetic intransigence? Perhaps I don't want to be fully accepted. Maintaining some kind of contempt or "edge"—in sum, a "potential dereliction" towards accepted modes of artistic decency—is a necessary stand to infuse the creative ethos with a kind of "threshold integrity" in which questioning (yourself) is not totally devoid of sense. Even being identified as a composer by this incongruent, name-driven, industry-oriented, hierarchical society is a



derogatory labeling of who I am. Regardless of functional attachments, this “refusal” is the very precondition of artistic mobility. Rather than infuse my music with acerbic pathos, which guarantees its quality, this refusal throws me into the middle of blind confrontations between the self and aesthetic choices. Following this line of thought, this “quasi-stoical” attitude can be extended to question the very performance spaces that are reserved for the presentation of (new) music in general. The protected environment of new music, with its proper public and selected spaces, can be viewed, on the one hand, as a cryptic but inevitable pocket of resistance opposing the tendencies of the music industry; or, on the other hand, as an asphyxiating convoy of “philistine” expectations, where new aesthetic forms are just subsets of a canonical behavior. “We” are more prone to disappointments if the “new voice” is not recognizable at all! This type of contradiction is intolerable, for it indicates a perverse mechanism that smothers freedom with its incestuous aesthetic traits. Therefore, if the musical canon is undesirable and the market unattainable, a viable attitude is to boycott such expectations that falsely presuppose where and when this or that music should be performed. Venues considered improper *a priori* for a certain type of music can be cast as “fertile ground” for undefined aesthetic proclivities. The fear is not in the music but in the composer who works with a certain frame of auditory reference in mind. This fear to “throw” the music/yourself “into the world” is a very convenient failing because it hides behind the fulfillment of known expectations. It misdirects the creative focus toward a rather timid goal since it places more importance on being approved than on being “unfitted.”

Obviously it is not that simple. I’m not naive. You don’t become an outsider by decision. Life’s crazy. Who knows what brings you here? I understand that the formation of groups or “artistic sects” is sometimes a necessary strategy to expose works that otherwise wouldn’t see the light of day. But these groups also become part of the convenient circuit of grants, academia, and sponsored events and personalities.

Enough for now.

#### Notes

1. Henry Cowell, in his book *New Musical Resources*, wrote: “Our system of notation is incapable of representing any except the most primary divisions of the whole note. It becomes evident that . . . new ways of writing must be devised. . . . We are dealing, of course, not with three-fourths metre, five-fourths metre, etc., but with a whole note divided into three or five equal parts” (1996: 56). Ferneyhough uses what he terms “irrational time signatures.” It is based on the same principle used by Cowell, the subdivision of the whole note. Thus, “2/10 signifies a bar composed of two beats each of which is equal to one tenth of a

semibreve" (Third String Quartet, performance notes). I prefer the use of the word "non-integral" instead of "irrational" to define the types of metric materials that are expressed through fractional numbers and cannot be expressed as an integer—ratios such as [5:4], expressed fractionally as  $4/5$ ,  $[30:16] = 16/30$ ,  $[7:5] = 5/7$ , etc. Below, a short definition of non-integral numbers:

1.1. We call  $z$  an integer if it is one of  $\{\dots, -2, -1, 0, 1, 2, 3, 4, \dots\}$ . Note: Integers are either natural numbers, negatives of natural numbers, or 0.

1.2. We call  $x$  a rational number if it can be expressed as  $x = \frac{p}{q}$  where  $p$  and  $q$  are integers. Examples of rational numbers are  $1/2$ ,  $3 (= 3/1)$ ,  $-5$ ,  $1/3$ ,  $.11111111111111 \dots (= 1/9)$ , etc.

1.3. We call  $y$  irrational if it cannot be expressed as a quotient of two integers. Examples:  $\pi = 3.14159265\dots$ ;  $e = 2.71828\dots$ ; the square root of  $2 = 1.414213562\dots$ ; etc.

1.4. Rational numbers come in two varieties: a) Integral (e.g., 3 or 6), or b) Non-integral (e.g.,  $5/6$  or  $7/9$ ).

1.5. Therefore, a non-integral rational number is a rational number  $x$  that cannot be expressed as an integer. We also call such numbers *fractional*.

2. The commutative property for multiplication states that the order in which two numbers are multiplied does not affect the product. Thus,  $a \times b = b \times a$ . The associative property of multiplication states that when three numbers are multiplied the products are the same no matter how the factors are grouped. Thus,  $(a \times b) \times c = a \times (b \times c)$ . In musical terms, these two properties complement each other because the factorization of a ratio can be expressed in many levels of rhythmic contractions. The commutative property will ensure the same result for ratios up to two levels, while the associative property will guarantee that the order position of the (many) factors will not affect the final product.

3. Micro-metric modulation presents specific ways to work with complex rhythmic materials. Its primary intention is to allow the performer to see rhythmic relationships that are not easily discernible at first sight, since they are "buried" under contrasting rhythmic configurations on the musical surface. I am also implying that you *cannot work* with complex rhythms by adopting an arbitrary permutational standpoint. Observe a jazz drummer. Whatever he plays, rhythmically, is the result of his complex improvisation pumping new rhythms out of previous ones. It all springs from motoric constraints that are "conditioned" or "enveloped" by physical laws. So, even if the brain cannot handle the "immediate math" of a new rhythm (it helps to know that a particle of what you've just played is in the same speed of what will happen next, rhythmically speaking), the composer—being aware of a common-denominator relationship between two rhythmic points—can provide a feasible route for the "hands to handle." The constant use of energy to dislocate rhythmic cells obeys the same physical laws that act upon the resultant sound. Therefore, it is easy to conclude that every defined rhythmic cell that is played is "caused" or propelled by something that came before—and not from an extraneous, unrelated rhythmic entity. That is the principle of metric and micro-metric modulation. These ideas are amply discussed in my doctoral dissertation (see Kampela 1998).

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