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## Towards a Fluid Audiovisual Counterpoint

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### I. Introduction

When composers of music begin creating audiovisual art, it is quite understandable that they might use musical terms and metaphors to conceptualize in the visual domain and frame audiovisual relationships. The known and familiar serve as starting points for navigating the unfamiliar. Such conceptual borrowing can unlock distinctive potentials in the new domain. But it can also lock the artist into limiting assumptions. So it is worthwhile to follow intuitive impulses that lead to the transfer of ideas from one domain to another. But it can also be valuable to interrogate the assumptions that lie behind such borrowings.

As a composer with a strong love of the Western classical tradition, I have certainly been inclined to think of musical counterpoint as a conceptual model for how sound and image might relate in audiovisual composition. As my own audiovisual practice evolved since 2004, I gradually decided that I wanted to develop my work towards an ideal of “fluid audiovisual counterpoint” — having only a vague intuition for the experiential potentials I was pointing to with the phrase. Portions of my 2011 audiovisual composition *Clonal Colonies* involved exploration of this idea<sup>1</sup>, departing from the extended isomorphism between sound and image that characterized much of my earlier work (see Battey and Fischman, publication pending). My intention in this article is to further investigate this idea of “fluid musical counterpoint”, seeking to explore the root intuition and provide firmer conceptual grounding for its development.

We can start with the definition of counterpoint, a term derived from *punctus contra punctum*, or “note against note”. By extension, this is taken to also mean melody against melody, denoting music that consists of two or more lines that sound

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<sup>1</sup> For example, see 4:00-5:50 in the 2<sup>nd</sup> movement, available at <https://vimeo.com/32146213>.

simultaneously. More specifically, it is “often used to distinguish textures in which each of the several lines sounding together retains its character as a line from textures in which one line predominates and the remainder are clearly subservient” (Randel 1978, p.121). It is this latter point of equality of lines that probably leads to the application of counterpoint as a metaphor for audiovisual composition for many composers: the commonly stated goal to have sound and image be of equal importance.

But what about other terms describing musical texture and the relationship between lines? The term counterpoint is nearly synonymous with *polyphony*, though the latter is arguably a broader term less tied to certain pedagogical and stylistic assumptions. Why don't we often speak of “audiovisual polyphony”, then? Perhaps in part the sound-specific “-phony” dissuades.

*Homophony*, on the other hand, refers to music “in which one voice leads melodically, being supported by an accompaniment in chordal or a slightly more elaborate style” (Randel 1978, p.227). *Heterophony* refers to “the simultaneous use of slightly or elaborately modified versions of the same melody” (p.220). Both could serve as interesting metaphors for audiovisual relationships.

Of course, such textural labels are not the only source of music-based metaphors for audiovisual relationships. “Orchestration” also appears. In describing his abstract film *Rhythmus 21*, Hans Richter noted, “The simple square gave me the opportunity to forget about the complicated matter of our drawings and to concentrate on the orchestration of movement and time” (Russet and Starr 1988, p.49). In his discussion of composing for objects that appear to emit both sound and light, Adam Basanta notes, “I envision the analysis of light and sound behaviour of a luminosonic object through a metaphorical extension of musical orchestration to the notion of audiovisual orchestration” (2013).

The following discussion narrows focus to the idea of counterpoint, and specifically to a particular model: species counterpoint.

## II. Species Counterpoint

Studying counterpoint involves learning to establish certain types of motion in the individual melodic lines and control of consonance in dissonance in the relationships

between those lines. Species counterpoint is one approach to this challenge, based on Johann Fux's *Gradus ad Parnassum*, 1725, focused on emulating the musical style of Palestrina (from the late 16<sup>th</sup> century). It is also the foundation of Schenkerian analysis, a widely used framework for analysing Western classical music.

Studying counterpoint is often a sore point for students, who may complain of what seems like just a system of arbitrary-seeming rules. Yet it can be argued that, ultimately, the study ultimately isn't about the rules. Rather, it is about training the musician's intuition in how vertical (harmonic) and horizontal (melodic) relationships can be managed as a perceptually coherent ebb and flow of hierarchically ordered tensions and releases. The rules are derived from perceptual criteria designed to create certain types of experiential results. (Implicit here is the idea that if one is aiming at different perceptual results, then different rules will be needed.)

The study of species counterpoint begins with lessons in writing a single melody, written purely in whole notes, called the *cantus firmus*. The *cantus firmus* is an abstraction of melody, focusing purely on linear rather than the harmonic factors that usually undergird Western common-practice melody. The aim is to establish melodic qualities of "direction, continuity, variety, balance, and completeness" (Salzer and Schachter 1989, p.3). So perceptual criteria, even if vague and relative, are the core concern, and rules are directed towards achieving those criteria. Example rules include: use no intervals larger than an octave or dissonant leaps (all of which can impede direction and continuity); the melody must contain one climax or high point (providing balance); leaps larger than a third should be followed by change of direction, preferably stepwise (to attain balance and continuity).

The student then moves to the study of different counterpoint 'species', which involve two or more simultaneous lines and different types of relationships between those lines, introducing vertical considerations. Foundational 1<sup>st</sup>-species counterpoint places a second melody in parallel with a *cantus firmus*, either above it or below it. This new melody must follow the same rules as the *cantus firmus*, plus it must also ensure that certain types of vertical relationships are maintained or avoided. These rules are still aimed at similar aesthetic aims as the *cantus firmus* and maintaining the integrity and independence of the individual lines. For example, "Because of their vertical instability,

3rds and 6ths are better able to promote horizontal, linear flow”, therefore they dominate. But there should be no more than three in a row, since otherwise the lines become too dependent. In contrast, contrary motion promotes independence of parts, and should balance parallel motion (Salzer and Schachter 1989, p.14).

With second species, two half-notes are set against each whole note of the *cantus firmus*. This creates an impression of strong beats (where the two lines have notes at the same time) and weak beats (where only the 2<sup>nd</sup> line has a note). In this context the student is introduced to the idea of a “passing tone”: a weak-beat movement between two strong-beat points of stability.

In third-species counterpoint, four quarter-notes are set against each whole note of the *cantus firmus*. This creates two levels of rhythmic differentiation: the second and fourth quarter-note are perceptually less strong, and the third has an intermediate strength. New configurations of the passing tone arise, as well as “embellishing tones” that provide stepwise decoration of a single tone, “consonant neighboring notes”, and other specialised configurations.

In fourth-species counterpoint, the added voice is made of half notes, but these are tied together over the bar, creating syncopated relationships. Here, the student is introduced to the “dissonant suspension” — where a dissonance is held through a strong beat and then resolved on a weak beat.

Finally, in fifth-species, eighth notes are introduced, the earlier species are all combined, and some specialized decorations of suspensions are enabled.

From here, the core idea of managing various extensions of tension and resolution form the study of “prolonged counterpoint”, which, even if it becomes quite complex, is ultimately elaboration and manipulation of the core relationships explored in the counterpoint species. The claim is that even if the fundamental contrapuntal progression moves far into the background, it is still the foundation that “gives impulse and coherence to the details of the musical foreground” (Salzer and Schachter 1989, p. 114).

Pedagogically and theoretically, this is an attractive model. The student is introduced to a core set of perceptually solid building blocks one at a time, establishing a simple but reliable foundation from which to develop more elaborate and expressive structures. Ultimately, one can depart from the core aesthetic assumptions of the model,

but firmly prepared with an experiential understanding of how a complex lattice of vertical and horizontal relationships can be forged into a hierarchically rich musical unfolding.

### **III. Limits of the Species Counterpoint Model**

Species counterpoint has proved to be a valuable model for learning control over the fundamentals of Western classical musical language. It is incomplete, however: it is an abstraction of an essence; it does not teach composition itself. Further, there is no difficulty in identifying the highly limiting aesthetic assumptions on which the edifice is built, particularly given the vast number of departures from those assumptions found in contemporary practice and beyond, and in other world music traditions. Amongst the core assumptions are the ideas the music must be organic, orient around climaxes and goals, build upon hierarchies of pitch and rhythm, and avoid either stasis or disruption and fracture.

In addressing the idea of “fluid counterpoint” and the challenges of audiovisual composition, it is worth pointing out in particular that the technique reflects the Western classical tradition’s emphasis on the discrete and measurable. It relies on an atomism: each note object is discrete and aligned on a clear time and pitch lattice (Wishart 1996). Thus music that focuses on continuums, let alone musical textures that rely on masses — or even the “music of sounds” (Landy 2007) — is not easily related to the counterpoint framework. In these cases, we may not have clear, isolated objects from which to assess vertical perceptual qualities, and perhaps not a clear temporal lattice around which to organise those qualities.

Finally, there is always the risk in such a framework that it becomes normative in a way that limits, rather than expands, creative potential.

Yet I will argue that the fundamental model of controlled alignment and non-alignment of horizontal and vertical tensions on a hierarchical scale is applicable even when working with non-atomistic materials. And, while the hierarchical model implies a perceptual dynamism that would not be appropriate for some aesthetics, it is, in the abstract, still a crucial foundation for a very broad range of musical expression.

#### **IV. Issues in Transferability to the Audiovisual Domain**

Further limitations quickly arise when we look at the transferability of species counterpoint ideas to the audiovisual domain. There are two questions, here. The first is how the concepts from species counterpoint might transfer into a purely visual time-based medium. The second is how the concepts transfer to audiovisual relationships.

For the purposes of this exploratory article, I am going to dodge the question of how counterpoint concepts could transfer into the moving abstract-visual domain, even though it would probably need to be addressed if the overall question of audiovisual counterpoint were to be addressed with full rigour. A key question would be: what would constitute our metaphor of horizontality and verticality? The problem becomes quite complex. In traditional Western music, the continuum of simple perceptual consonance and dissonance can be explored relatively objectively as a function of two or more fundamental frequencies (though even this is not as simple as it might seem). In the visual domain, however, we would need to deal with a more complex abstraction, wherein we begin to deal with more global, and less quantifiable domains, covering a far broader range of potential phenomena. No doubt there are vast number approaches. Offhand, I will note fragments of answers in the theories of Kandinsky (1926[1979]), the “differential dynamics” of John Whitney (1980), and the balance/imbalance and structural-key approach of Brian Evans (1992), serving as just a few indicators of the vastness and variety of this landscape.

One should note, too, that the applicability of such counterpoint metaphors to image do not necessarily mean that there is necessarily a potential for a perceptual “visual music” that can, through visual means alone, provide an affective pull directly comparable to that of music (see Levinson, 2006, for one exploration of why this might not be possible).

So, for our purposes here, let us assume that we can establish a ‘counterpoint’ metaphor within the moving visual domain, accounting for vertical (stability) and horizontal (temporal alignment) axes. We now face a complex problem indeed: matching moving image and sound now entails creating a counterpoint of counterpoints. Another possibility exists: we may be able to meaningfully discuss a counterpoint of image and sound, even if we cannot discuss the image itself in terms of counterpoint.

Faced with this challenge, and the broad territory existing at this intersection, the pragmatic value of a higher-order framework such as that proposed by Adam Basanta (2013) becomes attractive. Combining vertical consonance-dissonance and horizontal temporality axes inspired by Chion (1994) and Coulter (2010), Basanta adds a third axis measuring the strength of the perceptual bond between sound and image, enabling “notions of hierarchy or hierarchical motion between different types of audiovisual relations” (Basanta 2013, p.33).

Within this three-dimensional conceptual space, he identifies areas where various audiovisual typologies (such as isomorphic relations, heterogenous relations, and “rule-based counterpoint”) can exist. Basanta’s approach raises some difficult questions about how these three axes should be defined and how they interrelate. All three axes must be read as higher-order categories, and as such they may not be as separable as they seem. For example, “A/V counterpoint” (defined as independence of media streams) is placed at the far end of the temporality scale. But counterpoint is a concept that can actually range from temporal alignment (first-species counterpoint, for example) to a wide mix of temporal relationships (such as fifth-species counterpoint).

Still, the framework leads Basanta to suggest an idea particularly provocative for the question at hand:

This spatial approach allows the compositional exploration of hierarchical movement between audiovisual typologies. For instance, a movement between unrelated media pairs, via audiovisual counterpoint, temporal animation, and arriving at mapped isomorphy (a return to the rewarding percept of a cross-modal object) may be likened to a musical modulation towards the tonic. The tracing of a “path” or succession of audiovisual typologies offers the possibility of composed “phrases” of subsequent perceptual audiovisual relations. In turn, such “phrases” can be used as a motivic unit: repeated, varied and opposed. That is, we arrive at a notion of audiovisual composition in which the succession of various states of compositional dynamics can be conceived as a formal developmental device. (pp. 57-58)

One implication of such a framework is that we can potentially discuss a hierarchy of audiovisual relationships that can transcend — or avoid entirely — note/object approaches. We can maintain the central idea of the species counterpoint model of balancing horizontal and vertical relationships to maintain independence (or

perhaps better stated: interdependence) of lines in ways that can range from tightly isomorphic to fully heterogenous.

## V. Gesture

In visual and sonic materials, we don't have neat, isolated objects from which to assess vertical perceptual qualities. How, then, can we bridge species counterpoint when we don't have clear atoms?

The concept of gesture, as applied to musical composition, can help. The broad applicability of the term is rooted in its most common sense, what Godøy and Leman call body-related gesture: "Movement of part of the body, for example a hand or the head, to express in idea or meaning" (2010, p.5). Extending from this, we can define sound-related gestures as "movements in sound" (p.6). Indeed, there are arguments that musical perception itself ultimately fundamentally built on metaphors of movement (see, for example, Larson 2012).

Gesture is helpful, then, because it helps build a "bridge between movement and meaning" (Godøy and Leman 2010, p.12) and, through the metaphor of movement, ties the formation of musical meaning to our fundamental embodied experience (Hatten 2004, Larson 2012).

Gestures transcend atomism and are often very difficult to translate in to quantifiable terms. Instead, as composers working with gesture, our attention is likely focused fully on qualities of an experience. However, perceptual parsability is still fundamental:

Gesture can be defined as a pattern through which we structure our [perceptions of] our environment from the viewpoint of actions... [This] implies that movements can be chunked into patterns and that these patterns can be conceptualized and held in our mind as single units. (Godøy and Leman 2010, p.8-9)

Like species counterpoint, gesture, too, encompasses directionality, tension, resolution and goals:

...Simulation and imitation of behavior seems primarily concerned with arriving at certain goals, i.e. at certain positions in time and space, whereas the continuous trajectories to and from those goals are subordinate to those



goals. In studying music-related gestures it would be a good idea then to try to detect what we would call goal-points... (Godøy 2010, p.120)

In the phrase “gestural goal points” we are able to encompass complex, multidimensional activity that is still graspable to perception, parsable into units in time, and can include directionality.

So audiovisual counterpoint might be advantageously formulated not as a counterpoint of measurable, atomistic events, but rather as a phenomenology-based interdependence of gestures. Such an approach need not exclude note-based material, even highly traditional music. Instead, it would emphasize gestural qualities and energetic trajectories that extend across notes, based on the idea that “the gestural energy of a melody is phenomenologically more fundamental than the sequence of pitches of which a melody is comprised” (Hatten 2004, p.114).

So I would gravitate towards a “phenomenological theory of audiovisual counterpoint”, addressing how artworks can consist of two or more simultaneous gestural streams that “speak” simultaneously to form a higher-order perceptual whole. It would likely entail managing the alignment and nonalignment of goal points and sub-goal points between the gestures, with intermediary states subordinate.

## **VI. Fluid Counterpoint**

The adjective “fluid” implies an additional qualification to the idea of a counterpoint of gestural streams. A “fluidity” of relationship implies one that is not locked into precise, moment-to-moment linkages, emphasising smooth movement through continuums rather than discrete, lattice-based atoms of sound or image. Relatively strong — but still smooth — points of articulation in a continuum would likely be the primary means for establishing relationships, rather than points of instantaneous change.

In one approach, we would have a gestural counterpoint between the media streams in which there are relatively few simultaneous arrivals at primary goal points (points of stable alignment between the media) and a loose relationship between sub goal-points (points of lesser stability). In this sense, one could consider it a broad

metaphorical extension of 4<sup>th</sup>-species counterpoint, intentionally avoiding simultaneities but still maintaining a control over suspended and anticipatory tensions. The goal points could in many cases be more rigorously defined in terms of some kind of audiovisual “harmony”, while the intermediate states would be more freely and intuitively formed.

A more complex approach would control relationships not only on the basis of goal points a sub-goal points. It would also consider the relationships created between the shaping of the movements between goal points. Imagine two points in time that establish relatively stable relationships between image and sound, and then imagine two different ways of shaping the trajectory across the continuum between those stable points. While departure from and arrival at the goal points will likely be the primary determining factors of perceptual impact, the trajectories between the goal points could significantly alter that impact. Between the mediums, those trajectories could be in varying degrees of agreement/disagreement, consonance/dissonance or fusion/independence.

Developing a quantitative consideration of trajectories is probably quite difficult. It might be facilitated by the simple four-dimensional numeric shape definition provided by appropriately constrained Bézier splines, as I applied to the modelling of pitch curves in Indian classical music (Battey 2004). However, pedagogically speaking, combining a somewhat more rigorous definition of goal points with purely experiential evaluation of trajectories between them may prove more than sufficiently fruitful.

## **VII. Exploration: Indian Classical Music Gesture**

One oblique provocation that I am using to explore the idea of fluid counterpoint is to consider the spontaneous upper-body motions of Indian classical vocalists. The pitch-continuous nature of the music and the simultaneous flow of the physical gestures provide an intriguing model for consideration. The body gestures form a parallel discourse with the vocal utterance. They announce, through a variety of means, fundamental aspects of the experiential space of musical meaning. Sometimes there are relatively direct parallels to readily observed musical parameters, like pitch. Some aspects of the gestures reflect energetic trajectories that transcend note and even phrase boundaries. Others speak to a kind of felt symbolism of physics/malleability of sound,

pointing the fundamentally embodied nature of musical meaning (Larson 2012, Leman 2008).<sup>2</sup>

Matthew Rahaim has written extensively on the role of gesture in Indian classical music. “I have come to see the gestures of singers as a stream of melody parallel to the voice. This disciplined motion is neither random flapping about nor a coded restatement of what is being sung. Gesture complements vocal action without duplicating it, revealing knowledge about the shape, texture, and motion of melody” (Rahaim 2012, p.3). Extended to audiovisual composition, we might consider this to be an interesting expression of an ideal for image to sound relationship, though one in which musical melody is apparently the dominant element.

But what if we speak instead of a core meaning-complex, neither audio nor visual, lying at the root of the artistic act of the performer? Then we might suggest that, in the case of Indian classical vocal performance, both melody and gesture complement each other without duplication, revealing different aspects of the core meaning-complex. This could also be a provocative ideal for audiovisual discourse that truly aspires to an equality and interdependence of mediums.

Rahaim’s analysis reveals a wide range of types of relationships the physical gestures have to the musical gestures. In this respect, there is a resonance with Basanta’s suggestion in his typology space for audiovisual relationships: a work can move between many different types of typologies, while remaining coherent to the audience. For example:

Sometimes the melodic motion expressed in hands and voice has to do with parameters other than pitch: the hands may be linked to a changing vowel quality or to the amplitude of the voice. The hands are often used to manipulate virtual objects, during which time there is no such consistent link with any single acoustic dimension. Rather than serving as a link between space and sound, such gestures cohere in the consistent physicality of the virtual object at hand — its viscosity, elasticity, weight, and so forth. (Rahaim 2012, p.42)

Indian classical performance gestures can also reflect an awareness of trajectory, the higher-order temporal directionality of a musical gesture, and the intentionality that can exist prior to utterance:

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<sup>2</sup> For an example, see <https://vimeo.com/47269914>

The preparatory [phase] of a gesture, which generally precedes vocalization, often already contains a plan for the coming action... The hand, in other words, reaches for the sound before the voice begins. (Rahaim 2012, p.73)

The gestures also reflect an understanding of hierarchies of suspension and resolution that transcend individual phrases: “Hierarchies of phrasing that are longer than the breath are perceptible in gestures and correspond roughly to hierarchies of vocal phrasing” (Rahaim 2012, p.74).

Rahaim makes the important point that, “While singing, a singer appears not as a sequence of signs or a segment of flesh, not as a percept or an object, but as someone doing something” (Rahaim 2012, p.86). While this serves as a warning about the ultimate incompleteness of an analysis that does not consider embodiment, it also points to what I propose will prove a key element of a phenomenological fluid counterpoint: what Leman calls corporeal intentionality:

I argue that corporeal intentionality can be conceived as an emerging effect of action/perception couplings, the underlying engine of which can be defined in terms of a sensorimotor system. The engine turns the physical energies of music into an imaginary world of objects having qualities, valences, goals, and intentions, and visa versa... The essence of corporeal intentionality is the articulation of moving sonic forms, with the emphasis on movement in relation to behavioral resonances of the human body. (2008, p. 84)

Both sound and image can evoke such resonances. In Indian classical vocal performance, we see how the coherence and affective linking of both physical gesture and musical gesture find root in embodied experience.

Considering physical gesture in Indian classical music performance brings to the foreground Hatten’s observation about the gestural energy being phenomenologically more fundamental than notes. We are encouraged to think about the counterpoint of gestures, rather than a counterpoint of notes. We recognise the non-redundant, fluid, and spontaneously convincing richness that can exist between visual and musical gestural streams.

## VIII. Conclusion

Audiovisual composers and theorists can learn from the fact that species counterpoint is fundamentally perception based. Appropriate solutions are defined by the perceptual outcome they create, not by abstractions divorced from perception. Second, species counterpoint is a pedagogical technique that develops intuition in shaping rich, multidimensional phenomena vertically and horizontally into perceivable, graspable forms and sub-forms. That is, it helps in the development of multi-level hierarchical structuring and the management of tension, resolution, intention and directionality. Its incremental approach is also of value, starting with simple relationships and gradually building up layers of elaboration on a solid foundation.

In this abstract sense, the application of counterpoint as a metaphorical guide for audiovisual composition has value, though some aesthetic goals, clearly, won't be served by such a system. The richest results are likely to arise if we move well beyond the domain of simplistic note to image-object correspondence and instead consider relationships among sonic and visual gestures, more qualitatively than quantitatively informed. Finally, movement through higher-level perceptual axes, such as proposed by Adam Basanta, can well serve as a primary progenitor of large-scale form.

A fluid audiovisual counterpoint, then, is a specialised instance of this gestural counterpoint, emphasizing even more the ebb and flow of alignment and non-alignment of tensions between relatively smooth articulation points in continuums, rather than discrete objects and instantaneous change. Further, the concept of fluidity can apply also in the transitions between higher-order audiovisual typologies or structures. That is, it may apply not only to the counterpoint typology.

A pedagogy of audiovisual counterpoint would, by necessity, focus less on highly quantifiable rules than does species counterpoint. Instead, it would be a "phenomenological counterpoint", primarily developing a student's awareness of his or her own experience. The primary goal would be to inform the artistic intuition by expanding sensitivities and awareness of possibilities. It would explore a broad range of vertical and horizontal typologies, cross-referenced with many types of audio and visual textures, but guided by understanding that complete systemization is not possible, nor even desirable.

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