

An Interstitial Music

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The Art of Space

Architecture functions through space. The fundamental connection of architecture to space is a result of the role of a building as shelter and as demarcated boundary for human activity. Architecture delineates areas by articulating boundaries *around* the space. Without these boundaries, because of its nonroughness, space itself has no texture; it is illegible. Gilles Deleuze distinguishes between smooth and striated space:

[T]he striated is that which intertwines fixed and variable elements, produces an order and succession of distinct forms, organizes horizontal...lines with vertical...planes.¹

Striated space is the traditional space of architecture. Spatial definition results from the interrelations of elements, including form, scale, proportion, surface, shape, edges, openings, light, view, focus, and acoustics. Such elements are the critical means of architecture; their manipulation by the architect articulates and defines spatial identities, or *chunks*. This function of delineating striated from smooth space is particular to architecture; it is this functional and intrinsic relationship to space as *medium* that defines architecture as the *art of space*.

Real Time

While the composition of an architectural work is intimately bound to the spatial, an *architecture of space* can only be realized in real time. All of the elements of design may be utilized to manipulate space, but many of the elements themselves (including natural light, view, and acoustics) are temporal as well as spatial. A participant's understanding of an architectural experience comes from her perception of the building. While this perception is clearly guided by the organization of a given space, it can only be experienced as she progresses through the building in time. "A temporal architecture is an architecture of sequences. In moving from one place to the next, and then to the next again, space appears and disappears...marking the passing of time."²

Real time occurs in the architectural experience over the duration of passage through a building's spaces; when a participant has moved from one side of a room to another, he/she is older, real time has moved forward, and the world is in a greater state of disorder. *Circulation* is the architectural term for this movement through space; to circulate from one room to another, or from one chunk of space to another chunk of space, takes real time. Circulation "can be conceived as the perceptual thread that links the spaces of a building."³

Imaginary Time

Imaginary time is experienced in architecture through a series of relationships (in real time) between real space and human perception. How does one perceive this flow of time? How does one mark the passing of real time with regard to space and space configuration? Iannis Xenakis postulates:

We seize [time] only with the help of perceptive reference events, thus indirectly, and on condition that these reference-events be inscribed somewhere [and] do not disappear without leaving a trace. It would suffice that they exist in our...memory.⁴

¹Deleuze, *A Thousand Plateaus*, 478.

²Toyo Ito, "Steven Holl," *GA Architect* 11 (1993): 10.

³Ching, 248.

⁴Xenakis, "Concerning Time," 87.

Real time dictates that an observer can only be in one real spatial position at one real temporal moment. But two other factors begin to affect the perception of space at any given moment. These factors are *reflection* and *prediction*, and they stretch out in opposite directions from the moment, creating imaginary time through an "expanded" moment for the observer.

In order to experience an architectural work, as one moves in time through the complex web of spaces that is architecture, one must be "in the moment," reflecting on what has already been observed, and predicting what is about to be observed next. The reflection side of the moment can stretch; one is constantly re-collecting previous moments. The prediction side of the moment may stretch out ahead of the moment with a length that depends on the observer's previous experience with architecture of space. The architecture itself can in fact manipulate an observer's predictive ability.

Upon the conclusion of a particular event (the completed architectural experience), the observer is left with a *trace*, which lives in her memory. Memory of the work can be used to recall and re-collect the events of the experience. The trace allows the observer to remember the building, and to mentally traverse its spaces in any order, without regard to real space or time. The trace represents the work; it is an abstraction of the experience. Through analysis and description one can depict this experience; analyses and descriptions themselves are abstractions of the work. However, this process of memory need not re-engage the actual experience: it is a representation.

Reflecting, being, and predicting *during the experience* all occur in an interdependent system, and they may all inform each other in creating the perception of architecture. Modern architecture that concerns itself with the temporal enhances the human activity of perception in imaginary time.

The Art of Time

Much as architecture functions through space, music functions through time. The fundamental connection of music to time is a result of the inherent tendency of music to delineate and demarcate the boundaries of temporal events. Music partitions chunks of time by presenting events of distinct duration, and by articulating the boundaries *around* durations of time. This results in a temporal chain of events, which enhances one's awareness of real time. The boundaries of such temporal events are the musical materials that create segmentation:

Separation, difference, and discontinuity...are prerequisite to the notion of anteriority. In order for anteriority to exist, it is necessary to be able to distinguish entities, which would then make it possible to "go" from one to the other.⁵

These temporal entities make time apparent and understandable.

[I]f events were absolutely smooth, without beginning or end, and even without modification or "perceptible" internal roughness, time would likewise find itself...illegible [and] inapproachable.⁶

The distinction drawn by Deleuze between smooth and striated space (as noted in Chapter Two) could also be used to differentiate smooth (illegible) time and striated (perceptible) time. Pierre Boulez translates these spatial qualities into temporal ones:

⁵Xenakis, *Concerning Time*, 87.

⁶Ibid., 87.

Amorphous time is comparable to the smooth surface, pulsated time to the striated surface; by analogy, I will call these two categories smooth time and striated time.⁷

Striated time exists in music (as delineated space exists in architecture) through the composer's ability to articulate boundaries that make the listener aware of time. As architecture articulates the boundaries of space and creates the opportunity for human activity (experiencing) in a particular area of space, so music articulates boundaries of time, creating an opportunity for human activity (experiencing) over time.

The discrete temporal chunks that make up a musical work are themselves made up of discrete temporal events. These events have duration, and exist in real time, in the same way that the space of a room is a spatial entity, and still contains volume. The architectural chunk *contains* space. The musical chunk *contains* time. The recursive nature of a temporal event does not obscure the identity of that event as a discrete thing. As John Rahn notes:

To be a temporal thing is to refer to time essentially, [and] a temporal thing can contain other temporal things.⁸

Music is a temporal thing that is essentially *about* time, and it refers to time without the representation of any outside realities. Music is the articulation of time. It is this intrinsic relationship to time as *medium* that defines music as the *art of time*.

Real Space

A musical composition is intimately bound to real time. Even given its primary relationship to time, music (in both the esthetic and poietic modes of expression) has a second intrinsic quality: space. A musical work exists in its temporal chunks, but the acoustical phenomenon of sound also delineates areas of real space. Sound is the determining factor of real space in music; the properties of sound and acoustical phenomena create and manipulate real space. If a musical experience takes place in a concert hall, the hall itself defines the space that can be actively occupied. But the sound waves that travel through the room during the musical experience affect and demarcate the real musical space for the listener. The antiphonal choruses of fifteenth-century Italy, as well as the loudspeakers hung from the Philips Pavilion that played the *Poème électronique* by Edgard Varèse in 1958, are examples of the many ways in which composers might create and manipulate real musical space.

The *Poème électronique* was the first literal realization by Varèse of *spatial projection* in his music.⁹ This work was presented in collaboration with Le Corbusier and Xenakis, who had done the architectural design for the Philips Pavilion at the 1958 World's Fair in Brussels. The music consisted of taped electronic sounds, which were dispersed by numerous amplifiers and 425 loudspeakers mounted around the inside of the pavilion. These configurations had "various effects such as that of the music running around the pavilion, as well as coming from different directions, reverberations, etc."¹⁰ An example of a related technique is Stockhausen's *Gruppen*, which calls for three orchestras to be situated all around a hall, thereby manipulating the experience of real musical space inside. As another example, an outdoor concert of amplified music creates a spatial listening environment that is relatively free of architectural delineation. But the space of the music forms boundaries; the farther one gets from the source of the sound, the less one is in the "acoustic room" of the performance.

⁷Pierre Boulez, *Boulez on Music Today* (Cambridge: Harvard University Press, 1971): 89

⁸John Rahn, "Repetition," *Contemporary Music Review* 7 (1993): 51.

⁹Excerpted from a New York Times concert review in Jonathan Bernard, *The Music of Edgard Varèse* (New Haven: Yale University Press, 1987): 9.

¹⁰*Ibid.*, 9.

The experience of music thus depends on real time *and* real space; it is the active participation of the listener in this real time and space that allows for the *imaginary space* of music.

Imaginary Space

Imaginary space is experienced in music through a series of relationships between real time (in real space) and human perception. The passage of time is marked by temporal events, or chunks, which are inscribed in memory, and which leave a *trace*. Xenakis notes that the memory is perishable, and that it is made to be forgotten. "Memory [is] nothing but the trace of instants."¹¹ The trace allows the listener to remember the music, and to mentally traverse its events in any order, without regard to time or space. The trace re-presents the work; it is an abstraction of the experience. Through analysis and description one can depict the experience; analyses and descriptions themselves are abstractions of the work. Memory need not engage the actual experience; it is a representation.

The musical experience is a process of reflecting, being, and predicting. As the *reflection* side of the moment stretches; one is constantly re-collecting previous moments. The *prediction* side of the moment may stretch out ahead of the moment with a length that depends on the listener's previous experience with music. The music itself can challenge or enhance a listener's predictive and reflective ability. Like the architectural work, the musical work is a *presentational* process. Music that concerns itself with the spatial enhances the human activity of perception in imaginary space.

DeFormation

In a 1993 issue of *Architectural Design*, Jeffery Kipnis explicated a new movement in architectural thought, which he called DeFormation. This movement centers around the work of several architects including Kipnis himself, Peter Eisenman, and Greg Lynn, and uses the concept of *folding* from René Thom's catastrophe theory as a conceptual design tool. Their ideas for a new movement in architecture are based on a shift away from semiotics and phenomenology and a move towards geometry, complex science and political space. In essence a move away from Derrida and toward Deleuze.

According to Kipnis, any *new* architecture must adhere to three tenets: it must first avoid the logic of erasure and replacement by participating in re-combinations; second, it must engender a heterogeneity that resists settling into fixed hierarchies; finally it must propose new principles for design, and project new forms. The first two of these tenets adhere to the prescription for post-modernism; the third, however, moves beyond it. (As Kipnis demonstrates, collage as a design technique does not project new forms other than collage itself.) As theory, DeFormation is fundamentally about morphogenesis, or the generation of new forms.¹²

In an effort to clarify this alternative to postmodernism and collage, Kipnis lays out five characteristics for DeFormation. 1) *Vastness*: the work must reflect sufficient spatial extension to preclude the imposition of traditional, hierarchical spatial patterns. 2) *Blankness*: a formal abstraction is the result of the suppression of quotation or reference. The architecture can engage in unexpected formal affiliations without relying on fixed hierarchies. 3) *Pointing*: the work should direct us toward the emergence of new social arrangements and to the construction of new forms. 4) *Incongruity*: a repeal of the postulates of harmony and proportion; this results in the subversion and recombination of traditional programmed elements including the site, functionality and adjacencies. 5) *Intensive coherence*: the properties and assemblages of the work enter into multiple and even contradictory arrangements, creating a coherence forged out of incongruity. These properties begin to prescribe a design paradigm for a new movement in architecture, resulting in work that cannot be broken down into simple planar units.

¹¹Iannis Xenakis, "Xenakis on Xenakis," Translated by John Rahn, *Perspectives of New Music* 25 (1987): 46.

¹²Jeffery Kipnis

There are traditionally two main kinds of formal design spaces: use-space and interstitial space. The use-space is the primary space of a building, and the interstitial spaces are the transition or connective spaces. Interstitial space represents the middle-ground, the in-between. It can reflect the temporality of architecture, as it is often concerned with the idea of movement and circulation. DeFormationist architects say that the primary goal of their work is to render all the spaces in a building as *interstitial*, without making them homogenous. By toppling the traditional hierarchy of use-space and interstitial space and blurring the boundaries between foreground and background and time and space, DeFormation sets out to create an architecture of the interstitial. Could there be a musical corollary to this new movement in architecture? What might an interstitial music sound like? What new musical forms may be explored? A search for an interstitial music might yield fertile ground for exploring new musical complexities; perhaps leading to an illumination of an essential time/space relationship between these two disciplines.

An Interstitial Music

Conic Sections is a musical improvisation by Evan Parker, who is a free-jazz saxophonist and composer. Parker recorded *Conic Sections* in five movements on solo soprano saxophone in 1989. The piece combines virtuosic breathing and fingering techniques with a compositional approach to improvisation; each movement is a dynamic stream of continuous sound events which, as one composite unit, gives an impression of polyphony in multiple voices. Perhaps this work could serve as an example of an "interstitial music."

The sounds in *Conic Sections* are produced by a combination of several techniques. The keys of the instrument are fingered in polyrhythmic patterns that start out slowly and accelerate as the multiple voices spin into one composite sound. While the patterns are in motion, Parker demonstrates long durations of circular breathing producing a fluid and seamless sound. The combination of the circular breathing and the multiple voices creates a sense of movement, even urgency. But the spatial and static effects result with the addition of the final ingredient: speed.

György Ligeti discusses a phenomenon similar to *Conic Sections* in a description of his *Piano Concerto*: "The work is composed of repetitive patterns which appear in constantly new combinations. In perception, we soon abandon the pursuit of isolated rhythms, the temporal events then appearing as somewhat static. When this music is...performed at the given speed and with the given accentuation, after a certain time it will "lift off" like an aircraft: the rhythmic events, too complex to be perceived in detail, hang in a suspended state."¹³

The spatial effects in both of these works are analogous to the visual effects of the spokes of a spinning wheel; the spokes accelerate to a certain speed and become indistinguishable from the wheel as an entity. The moving spokes create an illusion of a non-moving wheel. They are integral to the wheel, no doubt, but they are useless as individual entities. Their meaningfulness is realized only in their interdependence with the other elements at a high rate of speed. In the musical works, once the sounds get up to speed, events occur in such a rapid succession that an aural illusion of polyphony is created. The polyrhythmic pattern accelerates until it seems to spin, and achieves a state of *moving/non-movingness*. The "spokes" in *Conic Sections* are in the counterpoint, which relies on the dynamic quality of the pattern through registral overlap and overtones.

At the beginning of the piece, the musical events of the pattern are dispersed from a central registral location, and the rotation begins slowly, so the interval of time between the events is long enough that we perceive each separate event existing for its own sake. As the pattern speeds up, the duration of time between the events gets shorter, and the musical texture becomes more dense. It is at this point that the piece "lifts off," and seems to hover without moving, almost as if time had stopped. Parker says: "the complexities reach such a pitch that they cancel one another

¹³György Ligeti

out and you get a blur. Not white noise but an impenetrable kind of thickness. Everything locks solid and stops.”¹⁴

The compositional process is one of assemblage, where all the improvisational and compositional techniques combine to enable Parker to “speak” with more than one voice; the listener fluctuates between hearing the spokes and hearing the wheel. The melody line, which is usually considered a horizontal element of music, is exposed as having vertical characteristics as well; in the sliver of time between when a tone is sounded and when it completely decays, Parker slips another in above or underneath it. Thus a melodic line is turned back on itself through a combination of speed, dexterity, and a multiplicity of focal points.

Revisiting the five characteristics outlined in an architecture of DeFormation in the context of an interstitial music, one finds that *Conic Sections* can be said to exhibit: 1) *Vastness*: in a musical context, sufficient *temporal* extension to preclude the traditional, hierarchical *temporal* patterns. The movements of *Conic Sections* are of substantial length and without pause or segmentation, creating a temporal extension that serves to subvert traditional temporal expectations. 2) *Blankness*: formal abstraction as the result of the suppression of quotation or reference. *Conic Sections* is abstract in this sense, subverting the traditional signification of the jazz saxophone sound. 3) *Pointing*: the work should direct us toward the emergence of new forms. *Conic Sections* certainly implies construction of new forms as it defies traditional formal analysis or reduction and cannot be deconstructed into simple components. 4) *Incongruity*: a repeal of the postulates of harmony and proportion. Though there is an overall continuity to the sound of *Conic Sections*, there are no traditionally proportioned formal divisions. 5) *Intensive coherence*: the properties and assemblages of the work enter into multiple and even contradictory arrangements. *Conic Sections* does indeed reflect an assemblage that projects multiple arrangements. It is a combination of techniques and musical lines performed on a solo instrument that creates a dense texture of individual identities which then assemble themselves into a composite whole.

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In the realm of the interstitial, there exists an essential connection between music and architecture; a connection that moves beyond the ghost of Pythagoras, beyond a frozen music, beyond translation. This connection is found in the relation of the architectural or musical work to its primary *and* secondary mode of expression; architecture in relation not only to space, but to time, and music in relation not only to time, but to space. John Cage aptly expressed this essential connection: “The arts are not isolated from one another, but engage in a dialogue. This understanding will introduce new kinds of spatial [and temporal] phenomenon. It is predictable therefore, that new music will be answered by the new architecture – work we have not yet seen, only heard.”¹⁵

¹⁴Evan Parker,

¹⁵John Cage,