

## **How Periodicity in Timbre Alters Our Perception of Time: An Analysis of “Prologue” by Gérard Grisey**

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### **Introduction**

Early spectralism remains under-explored as a treasure trove of new and exciting structures of sound and timbre. As a proponent of this genre, Gérard Grisey has written extensively about his philosophies of time, periodicity, and subjective musical experience. The few scholars that have written about this music have done so with the intent of either understanding how pitch is organized (Rose, 1996), how Grisey organizes his musical gestures to manipulate time (Hennessey, 2009), or to understand the process of instrumental synthesis and spectral harmony (Hasegawa, 2009). Grisey himself, in writing about his own music, discusses how extra-musical factors such as periodicity manipulate how one experiences time in music (Grisey, 1987). This literature opens a door into the philosophy of sound and time, and my presentation hopes to connect Grisey’s temporal concepts with an exploration of timbre in “Prologue,” from “Les Espaces Acoustiques.” With my approach, I hope to shed light on how listeners experience timbre and time in “Prologue.”

### **Method**

My methods for this presentation include an analysis of a few key moments of timbral fluctuations in “Prologue” using Grisey’s own classification of periodicity from his 1987 article “Tempus Ex Machina: A Composer’s Reflection on Musical Time.” The score does not include bar lines, so relative location in the score will be referenced to by time. For this presentation, I will be referencing the recording made by violist Gérard Causé, for whom the piece was written. (<https://youtu.be/Wy0DqvmMzQE>). According to Grisey, periodicity expands a listener’s sense of time, and unexpected events, or “chaos,” contract time by alerting the listener and drawing in their attention. By examining the distance and differences between timbral events in relation to periodicity, we can infer how expanded or contracted time is to the listener.

### **Results**

This piece features timbral fluctuations that accelerate to a climax in the middle of the piece and then gradually decelerate. Within this grand scheme are smaller systems of timbral tension and release. These smaller systems contribute to the whole by introducing new timbral events that ultimately arrive at a complete destruction of pitch and tone as the performer is instructed to make “scrubbing” sounds. From this, tone and pitch are gradually reintroduced in a way that marries the pitch-less timbres with melodic gestures that preceded them. Time can be said to feel the longest right after this aforementioned climax due to the minute changes in periodicity that are less perceptible after such a shocking timbral event. This piece subjects the listener to a variety of timbres, both comfortable and uncomfortable, and my research has found that changes in periodicity create the expanded and contracted senses of time more so than the timbral changes themselves.

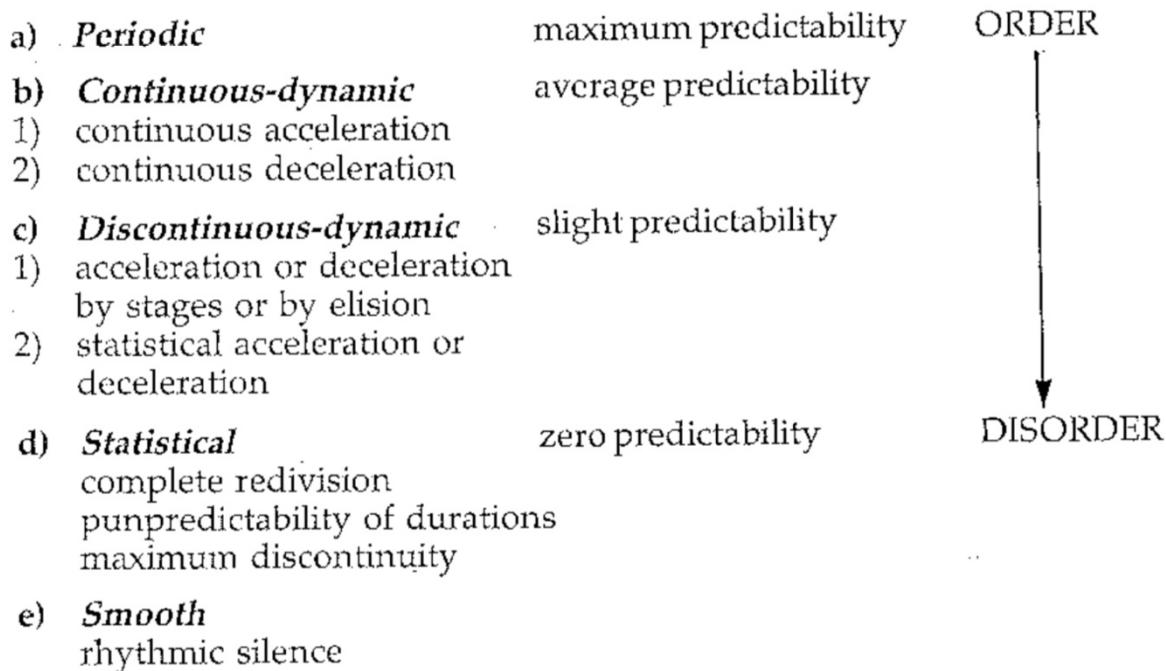


Fig 1: Grisey’s table of chaos and disorder from “Tempus Ex Machina: A Composer’s Reflection on Musical Time” (1987). Though he references rhythm and time in this table, he admits that this can be translated into other musical parameters, including timbre.

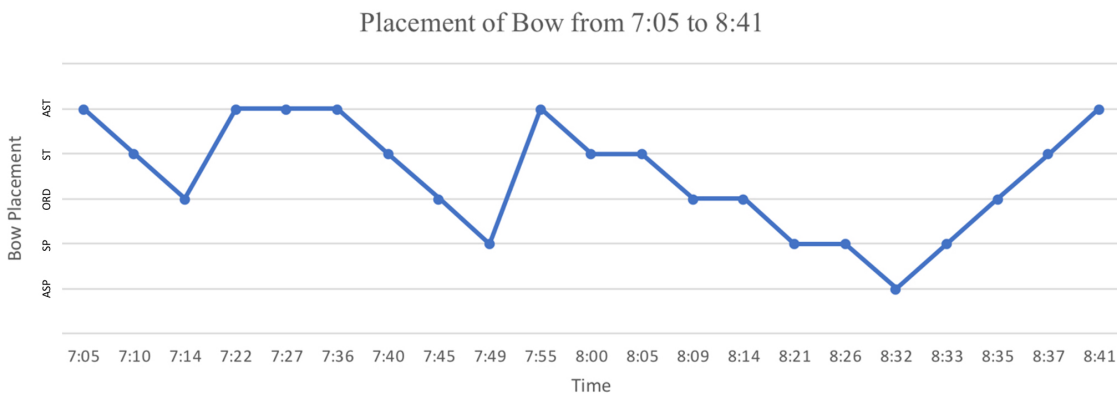


Fig 2: Placement of bow from 7:05 to 8:41. Time can be felt as expanded during 7:55-8:26 due to the doubled bow placements, meanwhile it can feel contracted from 8:32 – 8:41 due to the rapid bow placement changes. Here, AST stands for “alto sul tasto”, ST stands for “sul tasto,” ORD is short for ordinary placement, SP stands for “sul ponticello” and ASP stands for “alto sul ponticello.”

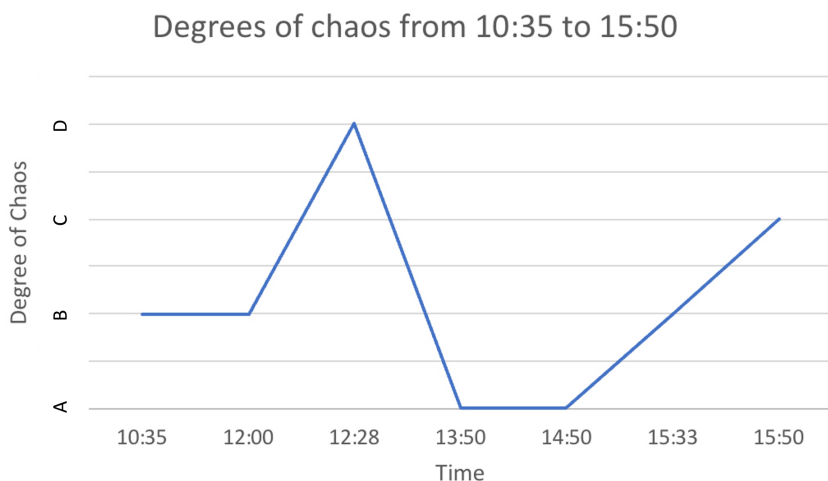


Fig 3: Degrees of Chaos from 10:35 to 15:50. The letters A-D are taken from Grisey's 1987 article, with "A" representing pure periodicity, and "D" representing non-linear changes in timbral periodicity. Time can be felt as slightly contracted between 12:00 and 13:50 due to changes in timbre that shock the listener. The periodicity that follows this from 13:50 to 14:50 can make the listener feel as if time is greatly expanded due to the small, imperceptible changes in pitch and timbre.

## Discussion

An understanding of how timbral fluctuations and periodicity play a role in the manipulation of time will allow us to understand Grisey's temporal concepts and how they appear in his early works. Though this concept can be understood through the lens of pitch or rhythm, rich timbral exploration is a key component of this genre, and understanding it together with other musical parameters is essential for a holistic understanding of this genre. This concept can be expanded into discussions about other spectral compositions as well as music outside of this genre.

## Acknowledgements

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## References

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