

REVIEW OF LIAM CAGNEY, *GÉRARD GRISEY AND SPECTRAL MUSIC: COMPOSITION IN THE INFORMATION AGE*, CAMBRIDGE UNIVERSITY PRESS, 2023

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“AS HUMANS, we’re rather obsessed with origins”—this simple provocation is at the heart of Liam Cagney’s *Gérard Grisey and Spectral Music: Composition in the Information Age*, a book that “seeks less to explain spectral music than to chart its causes” (4). Despite the apparent simplicity of this aim, what we now refer to as “French spectral music” was from the outset a stylistically heterogeneous field of composition and one that resisted unification under a common banner. Undaunted, Cagney grapples in his book with the plurality of early French spectral music by uncovering a vast network of musical influences, aesthetic impulses, and technological innovations that contributed to the developing compositional practice of one of its foremost innovators, Gérard Grisey (1946–1998). In this review, I provide an overview of Cagney’s insightful historiographic work and its significance to recent discussions that seek to account for the “frustratingly diffuse” field of contemporary spectral music (Bauer et al. 2022), along with some observations about the book’s analytical contributions. As a compelling account of the early coalescence of French spectralism, I am confident that *Gérard Grisey and Spectral Music: Composition in the Information Age* will become an important touchstone for future scholarship on spectralism and its place within the broader trajectory of Western post-tonal music.

Gérard Grisey and Spectral Music is organized in two parts: The first focuses predominantly on Grisey’s early musical training and the development of his mature compositional practice; the second traces the inception and gradual institutionalization of the l’Itinéraire collective, an ensemble that has been closely affiliated with French spec-

tralism since its founding in the early-1970s. While Cagney takes pains to explain that he is not equating French spectral music to the practice of Grisey alone, he argues that Grisey was the first composer in his cohort to fully realize the musical potential of contemporary research in psychoacoustics and information theory and that his approach thus constituted “the core of the movement” (3). The l’Itinéraire collective, for its part, not only provided a venue for the performance of early spectral music but also lent the motley group of composers an important sense of common identity that proved integral to their eventual establishment in French musical culture. Because this book seeks to position spectralism within the broader trajectory of Western art music, *Gérard Grisey and Spectral Music* regularly deals with the thorny issue of “influence”—an epistemologically opaque category that Cagney attempts to broach with a “holistic” historical methodology in which “the technical strategies and stylistic attributes of, for example, Grisey’s early works are situated relative to their concrete context and influences” (8).¹ Consequently, the eight body chapters

¹ Michel Foucault (1972) provides a characteristically pithy description of the challenges inherent to establishing influence in *The Archeology of Knowledge*: “Then there is the notion of influence, which provides a support—of too magical a kind to be very amenable to analysis—for the facts of transmission and communication; which refers to an apparently causal process (but with neither rigorous delimitation nor theoretical definition) the phenomena of resemblance or repetition; which links, at a distance and through time—as if through the mediation of a medium of propagation—such defined unities as individuals, *œuvres*, notions, or theories” (21).

(four in each part) largely avoid analytical discussions to allow more space for exploring their respective temporal and thematic historical frames, a methodological decision that I discuss below.

Chapters 1 and 2 deal primarily with Grisey's early life and musical education, offering rich biographical detail about his prodigious skill as an accordion player (for which he won numerous international awards), his first composition studies at the Städtische Musikschule in Trossingen, Germany (1964–66), and his eventual move to Paris where he studied with Henri Dutilleux (École Normale de Musique, 1967–68) and Olivier Messiaen (Paris Conservatoire, 1968–72).² Cagney draws extensively on Grisey's private journals for these chapters, crafting a vivid image of the composer's persona by introducing three of his life-long preoccupations: spirituality, death, and a feeling of being destined to become a composer. In addition to providing context for the later technical discussions about compositional influence, this character study allows Cagney to identify—convincingly, I think—some of the aesthetic priorities that Grisey maintained throughout the many transformations of his compositional practice, or "*écriture*." For instance, Cagney quotes passages of Grisey's journal in which he writes, at just twenty years old, of his desire to "make the synthesis between the cerebral and the emotional"; [...] and to create music that would be 'intellectual without that intellectualism being apparent'" (29–30). This last point becomes one of the primary themes of the book, as it encapsulates Grisey's principal critique of his serialist forebearers, whose approach he considered too far removed from perception, while also gesturing toward his desire to develop his own systematic compositional method.

Cagney draws on several of Grisey's student works in these chapters to illustrate an early engagement with both "serial thought" and the aleatoric and improvisatory techniques that were fashionable in late-1960s Paris. One of Cagney's most significant insights comes from the connection he makes between Messiaen's *personnages sonores* and the defined musical objects that Grisey identifies in his later compositional practice, such as the neume figures in *Prologue* (1976) or the "initial Gestalt" of *Partiels* (1975–6) (192). Cagney's argument is convincing, although there are several places where archival evidence is treated generically (e.g. "Grisey's sketches throughout his mature oeuvre show the influence of Messiaen's teaching on neumes" [39]) and where a few additional examples or reproductions might have been enlightening.

Chapters 3 and 4 establish connections between statistical serialism and Grisey's compositional practice in

1970–72, sketching the outlines of a style that "once it integrated spectral harmony and periodicity, evolved into French spectral music" (74).³ The chapters are organized around Grisey's two major proto-spectral works from this period, *Vagues, chemins, le souffle* (1970–72) and *D'eau et de pierre* (1972), which contributed to him being awarded the Prix de Rome in 1972. Cagney claims early in Chapter 3 that *Vagues, chemins, le souffle* introduces many of Grisey's lasting compositional techniques, including:

Schematic precompositional planning by way of the "global" sound parameters; the composition of auditory processes; the sequential repetition and variation of an audibly distinct sound figure; chords imitating harmonic spectra; and the composition of a "timbral mirror," whereby an ensemble chord is conceived as a macroscopic simulation of a microscopic instrumental tone (72).

The rest of the chapter is spent substantiating this claim by tracing these characteristic techniques back to Grisey's primary influences. From Karlheinz Stockhausen, Grisey developed his systematic approach for controlling independent musical parameters (75–76); from Pierre Boulez, the notion of "resonance chords" based on the "microscopic" structure of a sound or the harmonic spectrum (82–88); and from Iannis Xenakis, an interest in acoustic space (88–90) and composing processes of transformation (Xenakis's *métabole*) (90–92). Although Cagney's focus is largely theoretical, he provides sufficient musical and historical details for the discussion to be both engaging and convincing.

Cagney's analysis of *D'eau et de pierre* broadens Grisey's network of influences by outlining his participation in the cultural transformations catalyzed by Paris's May 1968 student protests and by highlighting key composers associated with the movement, including Claude Éloy, La Monte Young, and the American minimalists—an insightful contextualization that sheds light on several of Grisey's little-known reference points.⁴ Cagney also discusses the lectures that Grisey attended at the now-famous 1972 Darm-

³ While there is not a straightforward definition of "statistical serialism" anywhere in the book, Cagney does carefully distinguish between the approaches of composers associated with the practice, such as Karlheinz Stockhausen, Pierre Boulez, and Iannis Xenakis. Based on his references, it seems that he is working with the definition provided by Jennifer Iverson (2014) in her article "Statistical Form amongst the Darmstadt School," in which statistical serialism is defined as "a second stage of serialism, during which many of the Darmstadt composers used tools from electronic music and information theory to move away from pointillism and towards denser textures and more perceptible *Gestalten*" (343).

⁴ Grisey's interest in Eastern spiritual practices was likely fueled by this countercultural movement; unfortunately, Cagney does not address the appropriative or essentializing aspects of this practice, which operated through "the integration of non-Western thought into Western music" (Cagney 2023, 102).

² See Jonathan Goldman (2018) for a thorough account of the influence of Grisey's accordion training on his mature spectral practice.

stadt Summer Course, including those by Györgi Ligeti, John Chowning, Horațiu Rădulescu, Xenakis, and Stockhausen. Although many of these influences are convincingly brought to bear on his analysis of *D'eau et de pierre* (the connection to Xenakis's seminar is particularly strong [106–107]), the sheer breadth of sources that Cagney seeks to incorporate occasionally causes his descriptions to read like a patchwork of disparate techniques and aesthetic orientations.⁵ This reveals one of the weaknesses of Cagney's "holistic" methodology: By casting a wide historical net without also anchoring his discussion in close analyses of musical works, "influence" risks becoming an invisible hand, establishing causal relationships that proliferate so widely that we begin to lose sight of Grisey's compositional voice (e.g., his role as a mediator of these influences). Where he is able, Cagney helpfully directs the interested reader to the analyses of other scholars; however, because he focuses on several early compositions that are relatively undiscussed in the literature, I felt that his insightful historiography would have benefitted from more extensive music-analytical work, such as he has conducted elsewhere.⁶

Chapter 5 unpacks two major developments in Grisey's compositional practice: his engagement with contemporary research in acoustics while at the Villa Medici (where he lived from 1972 to 1974 as a *pensionnaire* of the Prix de Rome) and his reconfiguration of the principles of statistical serialism in his first idiomatically spectral composition, *Dérives* (1973–4). Grisey's first close study of acoustics was conducted with the help of two books: Fritz Winckel's *Vues nouvelles sur le monde des sons* (1960) and Émile Leipp's *Acoustique et musique* (1971). The specificities of what Grisey gleaned from these texts has already been discussed at length by François-Xavier Féron (2010a; 2010b; 2022); Cagney's contribution is to show how Grisey's understanding of acoustic principles allowed him to finally abandon equal temperament and thereby realize the aesthetic aims of statistical serialism more

fully. Namely, Cagney argues that early spectral composers drew on their new knowledge of psychoacoustics to realize the ideal of a "series-based approach to musical composition exploring immanent properties of hierarchization" while simultaneously discarding "what in serialism was arbitrary or of limited application (such as the use of the equal-tempered scale's twelve chromatic pitches, or the prohibition on repetition)" (147). Cagney's characterization of serialism is occasionally difficult to pin down, but I find his conclusion about the affinities between serialism and French spectralism to be very strong, particularly when tied to specific techniques like using frequency aggregates as models for parametric and formal organization.⁷ The chapter concludes with an extended analysis of how Grisey reconfigured the principles of serialism in his compositional approach for *Dérives*, the first work in his *œuvre* to explore the possibilities of "modeling an ensemble harmony on a given frequency complex"—a technique that would come to be known as instrumental synthesis (154).

While Cagney's work in uncovering the aesthetic and practical similarities between serialism and spectralism is very strong, it at times seems to disproportionately control the narrative of *Gérard Grisey and Spectral Music*. For example, Cagney establishes compelling affinities between French spectralism and several figures who are not directly associated with serialism, like Italian composer Giacinto Scelsi or American minimalists Terry Riley and La Monte Young. Although the influence of these composers is clearly demonstrated, they are never considered with the same attention to detail as the serialist composers. Instead, these alternative influences are typically discussed as characterizations of their most well-known traits (e.g., Scelsi is equated to one-note music [137] and minimalists are associated with a return to tonality and slow, repetitive textures [129]). There are certainly exceptions to this, like Cagney's insightful connection between Young's use of sum and difference tones and Grisey's adaptation of the same technique in pieces like *Partiels* and *D'eau et de pierre* (105), but I nevertheless closed the book with the feeling that there was a good deal more to be said about the aesthetic influences that contributed to the formation of French spectralism. Additionally, one unfortunate effect of Cagney's emphasis on the conceptual affinities of serialism and spectralism is that he sometimes overlooks the space that Grisey reserved for artistic intuition in his compositional process. For example, in Cagney's analysis of *Dérives*, he duly notes upon Grisey's technique of modeling the durational proportions

⁵ For example, Cagney (2023) states that "*D'eau et de pierre*'s aspect as a work of prolonged duration with few features—a piece of 'meditative music'—was in the spirit of the times, in sympathy with similar works by Stockhausen, Éloy, and Young in one respect, by Ligeti, Chowning, and Lucier in another (albeit Grisey never mentions Lucier's work, nor that of Radigue), and by Rădulescu and Nemescu in another, with a dash of Boulez's resonance chords and attack–reaction pattern. [...] Secondly, while Grisey's use of the harmonic spectrum as the basis for his 'absolute sound' *personnage* was probably encouraged by his study of *Stimmung*, it may also have been informed by Young, linking the concurrent rise of American minimalism and French spectral music" (115–116).

⁶ See especially his dissertation, "Synthesis and Deviation: New Perspectives on the Emergence of the French *courant spectral*, 1969–74" (2015), which provides the basis for much of this book's first part.

⁷ Eric Drott has related the polemics between serialism and spectralism to France's political landscape in the late 1960s, in which the younger movement deliberately positioned themselves as "an anti-institutional group within the field of contemporary music" (2009, 48). For a more music-theoretical discussion of the affinities between the two styles, see Kankaanpää (2011), 173–176.

of the piece's eight sections on the number of half-steps between the pitches of a twelve-note "harmonic prism" (152). However, he does not mention that Grisey omits three values from this collection (a 5 and two 6's) in what I take to be an example of Grisey's artistic intuition taking precedence over his abstract formal model.⁸ In short, although the connection that Cagney establishes between serial and spectral practice is very compelling, his analysis at times seemed more focused on situating French spectralism within the broader trajectory of the Western European avant-garde than on establishing "holistically" the network of actors and influences that shaped the movement.

Chapters 6 and 7 shift the focus from Grisey by tracing the establishment of the l'Itinéraire collective from its conception in 1973 as a "more inclusive alternative to the [Boulezian] Domaine Musical" (159) to its institutionalization as one of France's leading ensembles for concerts of new music in the late 1970s. Cagney describes the unstable status of new music performance in early-1970s Paris, which was struggling to gain public support after a fallout in 1966 between Boulez and the newly appointed musical director of the French Ministry of Culture, Marcel Landowski. Following the closure of the Domain Musicale in 1973, Landowski recognized the need to fund "a new organ for contemporary musical creation in Paris" and, wanting this new ensemble to operate outside of Boulez's influence, found the newly established l'Itinéraire collective (headed by Tristan Murail and Roger Tessier, and with the considerable backing of their teacher, Messiaen) amenable to his political aims (163). Cagney draws heavily on primary sources and personal interviews to craft a rich account of l'Itinéraire's early performances, Grisey's hesitancy to offend Boulez by participating in an official capacity (159), and the animosity that eventually formed between l'Itinéraire and Boulez's Ensemble Intercontemporain, which was established in the late 1970s alongside his state-funded research center, the Institut de Recherche et de Coordination Acoustique/Musique (IRCAM).⁹ Beyond the publicity that l'Itinéraire created for early French spectral music

through its many high-caliber performances, the collective was also important for the role it played in granting a sense of shared identity within the context of a highly polemical cultural sphere: Quoting composer Hugues Dufourt, Cagney explains that "it was necessary to clarify the aesthetic with the political, because with IRCAM, with the Ensemble Intercontemporain, things were radicalized. So, we had to make choices, to define ourselves on aesthetic level [sic]" (199).

Along with this historical account, Cagney provides extended theoretical discussions about compositions by Murail (*Sables* [1975], *Mémoire-érosion* [1975–6], *Territoires de l'oubli* [1977]) and Grisey (*Périodes* [1974], *Partiels* [1975–6], *Prologue* [1976], *Modulations* [1976–7]), works that he connects to contemporary advances in electronic sound synthesis by composer-researchers like John Chowning and Jean-Claude Risset and to the Gestalt principles of Abraham Moles's information theory. According to Cagney, with these components of their *écriture* in place, Grisey and Murail arrived in the mid-1970s at the first iteration of their mature spectral style, a practice characterized by "an audition-based compositional framework replacing the idealist acoustical absolutes of pitch classes with the moment-to-moment relativity of perceptual material; a musical surface replacing motivic development with continuous differentiation; a music not analytic but synthetic in conception" (189). Chapter 7 concludes with a survey of the diverse approaches taken by other first-generation spectral composers, such as Michaël Levinas's anti-formalist "aesthetic of the extraordinary" (220), Tessier's use of "amplification and signal processing effects" (220), and Dufourt's collaborative work with the l'Itinéraire musicians. Although the sections on Levinas and Tessier are a bit cursory, I find Cagney's introduction to Dufourt's compositional practice to be very insightful, particularly where he draws on interviews with performers to illustrate "the pivotal role—too often underplayed—of l'Itinéraire's instrumentalists in the realization of French spectral music" (232). There is likely a good deal more to be said about how these performers participated in the formation of the French spectral style, particularly through the frameworks of instrumental affordance and New Organology.¹⁰

Chapter 8, the last in *Gérard Grisey and Spectral Music*, fittingly takes up the process by which French spectral music both became codified as a singular "system" in Western art music and, paradoxically, began to dissolve into the heterogeneous field of compositional practices that exists today. By the late 1970s, the composers that we now associate with French spectralism had established the con-

⁸ François-Xavier Féron (2011) mentions these omissions in passing but does not speculate about Grisey's reason for omitting them. Grisey's form graph for *Dérives*, preserved in his archival collection at the Paul Sacher Foundation, consists of separate sheets of paper for each of the proportional values derived from the prism, all glued to a hard cardboard backing. There is evidence that these sections were created independently and then arranged freely according to his sense of the piece's dramatic arch, before being glued to the backing (for example, some section durations are taped over and have revised values written on the tape, suggesting that he changed his mind about the piece's durational proportions after completing his initial draft).

⁹ It seems that Grisey benefitted from his neutrality, as his *Modulations* (1976–7) was one of the Ensemble Intercontemporain's first commissions from a French composer (Cagney 2023, 88).

¹⁰ See, for example, De Souza (2017), Tresch and Dolan (2013), and Dolan (2013).

tours of their mature practices; however, despite recognizing affinities between themselves, the group had not yet banded together under a common name. Cagney's framing device for the chapter (and for the book as a whole) is to consider how the terms proposed by leading figures of the movement revealed their distinct aesthetic priorities. Murail's *musique vectorielle* is taken as an indication of the largely technical basis of his approach, which used IRCAM's computer technology to foreground "frequent harmonic structures modelled on the internal structure of complex sounds" (260). Dufourt's *musique spectrale* reflects the aesthetic priority he ascribed to "sound's behavior at a microscopic scale" (239). Finally, Grisey's *musique liminale* evokes the psychoacoustic grounding of his practice, which explores the perceptual thresholds between different musical parameters and sound materials: "The true reality of musical sound is a phenomenal reality, measured empirically by human audition and qualitative experience" (253). According to Cagney, these diverse aesthetic stances were consolidated at the 1982 Darmstadt Summer Course, where Murail, Grisey, Dufourt, and Levinas all presented their ideas and "spectral music as an international movement took off" (258). Following the Darmstadt meeting, these first-generation spectralists followed increasingly divergent musical trajectories. Nevertheless, the newly christened "spectral" style continued to develop and proliferate throughout the 1980s as younger composers, building on Murail's instruction at IRCAM, began to adapt his computer-based techniques to their own aesthetic ends.

Like so many artistic movements, French spectralism has a variety of colorful and, in some cases, historically dubious origin stories. Foremost among these is the account promoted by founding spectralist Michaël Levinas and continued in later scholarship (Féron 2011) that spectralism was born at the 1972 Darmstadt Summer Course when Stockhausen introduced his proto-spectral composition *Stimmung* and "we were brought back to timbre and its seemingly infinite perspectives" (Levinas 2011, translated in Cagney 2023, 218). Much of the allure of this story comes from the amusing effect that *Stimmung* apparently had on the young French composers, who were supposedly almost ejected from Darmstadt's public transportation because of their impromptu performances of the piece. Other accounts are more measured, such as Jonathan Goldman's (2018) insightful analysis of Grisey's early training as an accordionist and its effect on his subsequent compositional practice. There is truth to all of these narratives, but what is perhaps most relevant for our purposes is the end that they each serve. As sociologist Joanne H. Wright (2004) reminds us, origin stories are not neutral historical accounts but are crafted *a posteriori* to fill a group's need to "organize their

ideas about themselves and about the universe," to "make sense' of their society's history, its defining questions, and its very purpose" (7). She goes on, explaining that "to delineate beginnings is to set the course for what is to follow; it is to carve out an identity for those who see their experience reflected in myth. Thus, when we read these stories we gain access to our society's perception of itself, as well as to some of our perennial political preoccupations" (7). In other words, crafting an origin story is about more than just defining the past—it is also a powerful means of shaping the present identity of a group and its future trajectories.

The timing of Cagney's book is propitious in this regard, aligning closely with the publication of the first complete biography of Grisey's life (Brown 2023) as well as *The Oxford Handbook of Spectral Music*, which explicitly aims "to complicate the question of what gave birth to spectral music, what defines it, and what its future holds in the twenty-first century" (Bauer et al. 2022). Although spectralism has been a major stylistic current in Western art music since its inception roughly fifty years ago, efforts to define it through a unified set of techniques or aesthetic affinities between composers have been met with difficulty. As Jonathan Cross (2018) points out, so-called "spectral" techniques have become so ubiquitous in today's compositional landscape that one wonders whether "spectral music" is even a useful category "beyond a very particular moment in Paris in the 1970s" (8).¹¹ Thus, as a focused account of the emergence of French spectral music through the perspective of one of its most well-known figureheads, *Gérard Grisey and Spectral Music* is well-situated to provide not only an origin story for this particular group of French composers but also a dossier of the characteristic questions and aims that continue to provide a sense of cohesion to the increasingly heterodox field of present-day "spectralisms."

REFERENCES

- Bauer, Amy, Liam Cagney, and William Mason. 2022. *The Oxford Handbook of Spectral Music*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190633547.013.57>.
- Brown, Jeffrey Arlo. 2023. *The Life and Music of Gérard Grisey: Delirium and Form*. University of Rochester Press.
- Cagney, Liam. 2015. "Synthesis and Deviation: New Perspectives on the Emergence of the French *Courant Spectral*, 1969–74." PhD diss., City, University of London.
- Cagney, Liam. 2023. *Gérard Grisey and Spectral Music: Composition in the Information Age*. Cambridge University Press.

¹¹ Similar concerns are raised about the viability of a "post-spectral" style in Clift (2022), Everett (2022), and Lochhead (2022).

- Clift, Paul. 2022. "Philippe Leroux and the Notion of the Post-Spectral." In *The Oxford Handbook of Spectral Music*, edited by Amy Bauer, Liam Cagney, and William Mason. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190633547.013.33>.
- Cross, Jonathan. 2018. "Introduction: Spectral Thinking." *Twentieth-Century Music* 15(1): 3–9.
- De Souza, Jonathan. 2017. *Music at Hand: Instruments, Bodies, and Cognition*. Oxford University Press.
- Dolan, Emily I. 2013. *The Orchestral Revolution: Haydn and the Technologies of Timbre*. Cambridge University Press.
- Drott, Eric. 2009. "Spectralism, Politics, and the Post-Industrial Imagination." In *The Modernist Legacy: Essays on New Music*, edited by Björn Heile, 39–60. Ashgate.
- Everett, Yayoi Uno. 2022. "Transcending Ethnicity: Post-Spectral Music by Xu Yi, Anthony Cheung, and Yoshiaki Onishi." In *The Oxford Handbook of Spectral Music*, edited by Amy Bauer, Liam Cagney, and William Mason. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190633547.013.1>.
- Féron, François-Xavier. 2010a. "Sur les Traces de la Musique Spectrale: Analyse Génétique des Modèles Compositionnels dans 'Périodes' (1974) de Gérard Grisey." *Revue de Musicologie* 96(2): 411–443.
- Féron, François-Xavier. 2010b. "Gérard Grisey: première section de *Partiels* (1975)." *Genesis* 31: 77–97.
- Féron, François-Xavier. 2011. "The Emergence of Spectra in Gérard Grisey's Compositional Process: From *Dérives* (1973–74) to *Les Espaces Acoustiques* (1974–85)." *Contemporary Music Review* 30(5): 343–375.
- Féron, François-Xavier. 2022. "Spectra as Theoretical and Practical Models in Gérard Grisey's Creative Process." In *The Oxford Handbook of Spectral Music*, edited by Amy Bauer, Liam Cagney, and William Mason. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190633547.013.19>.
- Foucault, Michel. 1972. *The Archeology of Knowledge and the Discourse on Language*. Translated by A.M. Sheridan Smith. Pantheon Books.
- Goldman, Jonathan. 2018. "Gérard Grisey, Accordionist." *Twentieth-Century Music* 15(1): 11–29.
- Iverson, Jennifer. 2014. "Statistical Form Amongst the Darmstadt School." *Music Analysis* 33(3): 341–387.
- Kankaanpää, Vesa. 2011. "Dichotomies, Relationships: Timbre and Harmony in Revolution." In *Kaija Saariaho: Visions, Narratives, Dialogues*, edited by Tim Howell, Jon Hargreaves, and Michael Rofe, 159–176. Ashgate.
- Levinas, Michaël. 2011. "Y-a-t'il eu un jugement dernier à Darmstadt en 1972?" Concert Program for Ensemble InterContemporain. November 29. Paris: Cité de la Musique.
- Lochhead, Judith. 2022. "On Saariaho's Microsonology." In *The Oxford Handbook of Spectral Music*, edited by Amy Bauer, Liam Cagney, and William Mason. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190633547.013.49>.
- Tresch, John, and Emily I. Dolan. 2013. "Toward a New Organology: Instruments of Music and Science." *Osiris* 28(1): 278–298.
- Wright, Joanne H. 2004. *Origin Stories in Political Thought: Discourses on Gender, Power, and Citizenship*. University of Toronto Press.