A Hermeneutic Approach to Contemporary Music Analysis

by

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DISSERTATION ABSTRACT

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Title: A Hermeneutic Approach to Contemporary Music Analysis

This dissertation offers a hermeneutic approach towards analyzing contemporary music, stating that a unified methodology that combines music-theoretical and musicological perspectives is essential for understanding how twenty-first-century music both influences and is influenced by the conditions of the modern age. I argue that this hermeneutic model allows music analysts to combine descriptive accounts of musical details with broader cultural narratives and philosophies to uncover the deeper ontological and sociopolitical pillars of a musical work. This method proceeds sequentially through contextual and technical inquiry, aiming to keep the final interpretation close to the specific realities of the work's creation.

To do this, I draw on Hans-Georg Gadamer's concept of "horizons" as presented in his 1960 work *Truth and Method*. I present a six-step analytical methodology, partly inspired by Lawrence Kramer's 1990 and 2010 works, intended to assist analysts in fusing their analytical horizons with the horizon of the work. This process begins with investigation of primary, composer-based sources, then moves to ethnographic inquiry with performers and creatives involved in the work's conception. With these findings, the method then continues into the sociopolitical contexts and backgrounds of the work. This context, established over the course of Steps 1-3, allows the analyst to curate guiding questions and a music-analytical method that best

suits the specifics of the work. After Steps 4-5--the primary analytical steps—the method zooms out to a speculative inquiry about how the work reflects or rejects broader philosophical lineages.

I apply this framework to Kaija Saariaho's *Innocence*, and Tonia Ko's bubble wrap works, *Breath, Contained II* and *III*. In the case of Saariaho, the methodology demonstrates how a contextualized motivic analysis can unveil how the score articulates the complex narrative of complicity and guilt while centering survivor perspectives. Conversely, for Ko, this method illustrates how the same procedural steps can be used to interpret the structure of found-object compositions. These applications serve to demonstrate the method's scalability, proving that a structured hermeneutic inquiry provides insights across various musical genres.

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DEDICATION

Dedicated to my family: Mom, Dad, Abuelita, Valerie, and Vanessa, whose love and support gave me the foundation to believe in myself. And to Anthony, for his endless patience and infectious positivity.

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CHAPTER 1

INTRODUCTION

Imagine, for a moment, that you are the author of this dissertation, travelling to a destination and staying at a modest hotel with only a basic cable TV package provided. Seeking some background noise, you turn on *The Great British Bake Off* as you unpack your suitcase and settle in for the night. Before long, however, you find that most of your belongings are still tucked away, because you can't quite pull yourself off the couch. You are not someone who has any interest in baking, yet there is something inescapably absorbing about watching the bakers at work and seeing both the process that creates the pastries followed by the consumption (and subsequent judgement) of them.

What is it about the demonstration of process that commands your attention? Why does watching the bakers at work provoke an interest in a practice you might otherwise disregard? For you, much of the intrigue lies in seeing the timeline of the pastries' creation, noticing the decisions that had to occur, understanding the backgrounds of each contestant and hearing the judges expertly break down each pastry. These contexts together animate the cakes to be something much more than simply flour, sugar, and butter.

In much the same way, our appreciation of musical works can gain much greater depth when attention is paid to the process and backgrounds that brought them into being. While a cake may be fully enjoyed as a final product, and a composition may be valued in isolation from its context, a much richer understanding results from consideration of its practical, cultural, and historical dimensions. This study seeks to foreground that process, exploring not only what a work sounds like and how it is organized, but how it came to be, why it takes the form it does,

and what the decisions of its creator reveal about the broader artistic and sociopolitical environment in which it was produced.

Gadamer

The Great British Bake-Off invites viewers to consider process together with a finished product, and philosophical hermeneutics offers a way of theorizing how such contextual horizons shape meaning. Hans-Georg Gadamer argues in his 1960 work *Truth and Method* that understanding can never occur in isolation. We do not encounter a work of art (whether that be visual art, literature, music, or pastries) as blank observers. Rather, we approach it with our own histories, assumptions, habits of listening, and expectations. Gadamer calls this the *horizon of the interpreter*. The work itself also develops out of its own web of cultural, historical, and practical conditions that shaped its creation--the *horizon of the work*. Interpretation, then, arises when the *horizon of the interpreter* and the *horizon of the work* meet in what he called a *fusion of horizons*.[1]

However, this fusion is rarely as simple as it sounds. When these two horizons fail to align, the resulting dissonance often manifests as misunderstandings and rejection. This can be observed in 21st century concert music, where extended techniques and unconventional performance practices often clash with inherited cultural ideas about what concert music "should" be. Listeners not accustomed to this new tradition may dismiss such works as ugly, shallow, or even antagonistic because the listeners' interpretive frameworks are ill-suited to the worlds of these works. In these moments, Gadamer would say that our prejudices are being exposed.

[1] Hans-Georg Gadamer, *Truth and Method*, trans. Joel Weinsheimer and Donald G. Marshall, 2nd rev. ed. (London: continuum, 2004), 301-306.

For Gadamer, however, confronting prejudices is a normal part of analysis. Every act of interpretation and every interpreter begin with a position of partial knowledge and expectation. In the same way that a person cannot be entirely free from bias, an interpreter cannot rid themselves of prejudice. The task of the interpreter, then, is not to pretend that these prejudices do not exist, but to become aware of them and allow them to be challenged and transformed through the act of analysis. This, in turn, grants the interpreter a refreshed horizon, which can then be reapplied to the music in a never-ending hermeneutic circle.[2] Thus, Gadamer concludes an essential stance towards analysis that becomes crucial for my project: there is no singular, objective truth hidden inside a piece of music. Analysis involves a constant dialogue between the work and the interpreter, one in which is mutually transformative.

This has important implications for contemporary music. A Gadamerian approach towards musical analysis investigates the kinds of questions the work is trying to pose and what kinds of modes of listening it invites. It also acknowledges that our own historical position matters. As 21st century listeners, performers, scholars, and music lovers, we are uniquely and advantageously positioned to engage with music created in our own time because we inhabit the same social, technological, and cultural environments. That, of course, does not assume that we are inherently gifted with frameworks to perfectly understand contemporary pieces, but that our horizons are more likely to align with a given work.

This dissertation takes this dialogic model of understanding as its starting point. I adopt Gadamer's approach towards interpretation as a dynamic encounter between a musical work's horizon and the horizons of those who engage it to develop a method that helps best smooth over this process of fusion. Just as *The Great British Bake-Off* reveals how knowledge of process

[2] Gadamer, *Truth and Method*, 273-277.

deepens our appreciation of a finished cake, this study argues that knowledge of a work's material, social, and creative processes reshapes how we hear and understand contemporary music. This approach closely follows Roger Savage's (2009) application of Gadamerian hermeneutics to music criticism. Similar to his own understanding of interpretation, I also approach musical understanding as a conversation between individual analyst and historical/cultural contexts.[3]

This dissertation also recognizes that the horizon of the interpreter is not an abstract concept but one that includes my own position as an analyst. My interests in contemporary music and 20th century philosophies regularly inform the choices I make in this project and my own personal background as a Latin American woman also determines for me the selection of repertoire. Following Gadamer, I do not view these interests as obstacles to interpretation, but as productive starting points that remain open to revision through sustained engagement with the works themselves.

To put my methodology into practice, I propose a six-step analytical framework that attempts to bridge these horizons. These steps combine ethnographic inquiry (including interviews with composers and performers) and examination of sociopolitical contexts in which each work was created to allow the interpreter to better understand their music-analytical goals before delving into any specific work. These layers of context are necessary to adjust and expand the interpreter's horizon before and alongside close musical analysis. Through this method, I bring contextual knowledge together with detailed listening and theoretical analysis to arrive at richer, more open interpretations of two contemporary works: Kaija Saariaho's final opera

[3] Roger WH, Savage. *Hermeneutics and music criticism*. Routledge, 2009.

Innocence (2021) and Tonia Ko's three-part series for bubble wrap *Breath, Contained* (2013-2023).

The selection of these two pieces is a deliberate attempt to test my methodology against two substantially different contemporary works. The most apparent difference between these works lies in the genre and musical material itself. *Innocence* is a massive, multi-lingual opera where pitch-based vocal performances carry much of the musical and emotional weight. Meanwhile, *Breath, Contained* is a three-part series of pieces that involve musical explorations of bubble wrap, first as a solo improv, then as a 5-person group improvisation, then as a concerto. With bubble wrap as its primary solo instrument, the series strips away tonality and pitch centricity, instead relying on contrasts in timbres from the object to create tension and continuity. This duality of voice-and-pitch versus object-and-sound allows me to demonstrate how my methodology functions in both contexts.

Furthermore, these works offer an opposition between narrative and non-narrative forms. *Innocence* is a linear story of trauma and memory; its musical structure is often connected with both the libretto and the dramatic arc of the story. *Breath, Contained*, however, lacks this narrative scaffolding. It is a work that foregoes a linear story and instead features an arc of exploration with the material itself. While it might be easy to assume that contextual analysis best aids in enriching our understanding of works with a clear narrative (especially a contemporary political one, in the case of *Innocence*), I aim to prove that contextual analysis not only can be effectively applied to works with "no story", but can be equally elucidating for these kinds of works as well.

Additionally, despite their many differences, both works share an interest between performance and social experience. Victor Turner (1982) argues that stage drama and social

drama exist in a reciprocal relationship and performance (whether musical, theatrical, or otherwise) provides a space in which broader social tensions can be explored and reimagined.[4] *Innocence* approaches these concerns through an explicit narrative centered on trauma and memory, meanwhile, *Breath, Contained* approaches them through collaborative performance practices and the transformation of everyday materials into musical objects. In different ways, both works invite consideration of how music mediates social experience, making them particularly suitable case studies for my methodology.

Thus, while these two works seemingly have no relation to one another, it is exactly this disparity between them that makes this pairing essential to my argument. By applying the same methodology to two largely different works, I aim to demonstrate that this mode of analysis is not specific to any one piece or genre but is instead versatile and capable of revealing structural and contextual logic across a wide stylistic spectrum.

Methodology

My six-step method is inspired by a host of scholars whose analytical approaches combine hermeneutic, ethnographic, and perceptual frameworks. Among these, Lawrence Kramer ‘s approach to hermeneutical musicology functioned as the nucleus for my idea, specifically in his description of analysis as a flexible and open-ended investigation into musical detail and cultural/historical context. In his work *Music as Cultural Practice*, he develops a 5-step hermeneutical approach for interpreting music that starts with a “hermeneutic window,” then delves into metaphorical and symbolic associations, and ultimately ends with music-theoretical

[4] Turner, Victor W. *From Ritual to Theatre : The Human Seriousness of Play*. Performing Arts Journal Publications, 1982.

detail.[5] One of the key elements I pick up from Kramer (beyond the framework of a multi-step methodology) is his attitude towards interpretation as a creative and reciprocal exchange between the analyst and the work. Thus, one can see how Kramer's method compliments Gadamer's philosophy, and how it inspired my method.

Additionally, my work is further inspired by Georgina Born and her perspectives on how ethnography and inquiry into the social conditions of a work's production can impact creation of contemporary works. From her book *Rationalizing Culture: IRCAM, Boulez, and the institutionalization of the musical avant-garde* (1995), I adopt her premise that musical works are products of complex social systems that are influenced by institutional politics and technological developments.[6] Significant for this methodology is her ethnographic approach that encourages analysts to understand musical works as products of collaborative social relations and cultural institutions. Though I discuss her work in more detail in my literature review, Born's work is nonetheless crucial for developing the ethnographic approach that will be described in Steps 1-3.

While Kramer and Born inspire my hermeneutic approach to music analysis, several other music-theoretical scholars provide essential frameworks for conducting analyses on contemporary works. Judy Lochhead's *Reconceiving Structure in Contemporary Music* (2015) rejects the idea of prescriptive formalisms in analysis and instead adopts a method of "investigative mapping," which provides the basis for my analytical stages, Steps 4-5. In this model of investigative mapping, Lochhead investigates the work holistically, prioritizing the discovery of unique behavioral logics of sounds and structure over application of standardized

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[5] Lawrence Kramer, *Music as Cultural Practice, 1800-1900* (Berkeley: University of California Press, 1990).

[6] Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley: university of California Press, 1995).

formal categories (to be discussed further in the literature review).[7] I follow the spirit of this approach by allowing my ethnographic inquiry from steps 1-3 to inform how I approach the work analytically. With the analyses themselves, I also emphasize the importance of perceptual clarity in defining structure, whether that's through tracking salient motivic changes in *Innocence* or mapping the structure of a work through the perceptual strength of sonic boundaries in the case of *Breath, Contained*.

All together, these three authors provide a foundation that allows me to construct a methodology that moves fluidly between context, sound, and interpretation. Thus, the following six-step method is designed as a set of flexible rules that can be adapted to the demands of each work.

My Six-Step Method

Building on these models, I propose a six-step analytical framework designed to bring interpretive logic to the study of contemporary music. This method is intended to be flexible, allowing questions posed by the analyst to be shaped by the specific materials, practices, and conditions surrounding each piece. In doing so, I hope to employ hermeneutic approaches to foreground process, collaboration, and sociopolitical context before engaging in musical analysis.

Step 1, which I've titled "Primary Sources," involves inquiry into the composer's primary sources to better understand how the composer conceptualizes their own practice. This includes interviews, program notes, personal websites, articles, dissertations and other self-published materials produced by the composer. Additionally, this step involves direct ethnography with the

[7] Judy Lochhead, *Reconceiving Structure in Contemporary Music: New Tools in Music Theory and Analysis* (New York: Routledge, 2016).

composer as is possible for the analyst. For example, direct communication with Saariaho is no longer possible due to her passing in 2023, thus I omit this ethnographic approach in my work with her opera. When working with Tonia Ko's trilogy *Breath, Contained*, however, I do conduct interviews with Ko to better understand her work. The aim of this step—whether it utilizes direct inquiry with the composer or not—is not to treat these sources as definitive or dogmatic, but rather to gain insight into the composer's central ideas when imagining their work. For example, should a composer suggest that they are influenced by the works of György Ligeti, that may clue the analyst into some of the composer's philosophical and aesthetic priorities, but on its own, without input from steps 2 and 3, it should not suggest that the analyst adopt a Ligeti-centric perspective. Rather, it suggests that the analyst should consider the philosophies of twelve-tone music, early electronic music, fractals, or even the literary authors Ligeti was interested in when considering the composer's own work. This may help to illuminate the central compositional concerns of the work.

Step 2, titled "Ethnographic Inquiry," extends beyond the composer into ethnographic inquiry with performers, conductors, directors, designers, and other creatives whose work helped shape the piece into being, without being directly involved in the creation of the work. In practice, the degree to which this step can be realized depends on a multitude of variables including access to archival materials, access to performers and collaborators for interviews, and overall popularity of the work, including how many different performers have performed the work. Despite the difficulties potentially associated with this step, its inclusion nonetheless reflects the importance of approaching contemporary music as a relational practice, rather than the product of a single, isolated, creative mind—an approach that follows Born's own work. Long gone are the late-Romantic narratives of geniuses slaving away by candlelight, hunched

over a manuscript, leaving their room only to gaze longingly at the bountiful sea before returning to their den to allow themselves to be struck by divine inspiration in solitude. Such models of idealized genius are not only misleading, but inaccurate to describe how musical works are produced in the present. Contemporary composers work within complicated networks of technological and social tools, allowing for worldwide connections with others at their fingertips. Step 2 therefore exists to resist the tendency to treat the musical work as the expression of a single, authorial voice, instead insisting that the collaborative conditions become central to interpreting the work. Ethnography, then, becomes essential to this method.

To further clarify the scope of this step, consider the first work I analyze in this project, Kaija Saariaho's *Innocence*. This opera was created by a three-person team: composer Kaija Saariaho, librettist Sofi Oksanen, and dramaturg-linguist Aleksi Barrière. All three members were directly involved in the creation of the opera, and therefore, my approach considers the team to be one large unit that created the work. Inquiry into primary sources with the team would be considered in the domain of step 1. However, there was also a large team of musicians and performers that worked with the creators to help bring the piece to life, including performers like Vilma Jää (who played the role of Markéta), whose unique voice directly inspired Saariaho to reconfigure and redesign some of Markéta's melodic lines. My approach would consider ethnography with performers like Jää to be within the domain of step 2.

However, it is not always the case that creatives draw on so many external sources for inspiration. Take, as another example of this, Ko's *Breath, Contained* trilogy, which featured only herself as both the composer and performer that premiered the work. In her case, her practice with bubble wrap developed through years of engagement with the material across several instances and disciplines, including working with collaborators outside of her *Breath,*

Contained project. These interactions helped to inform her approaches to material, gesture, and sound, elements that become crucial to the musical analysis of this work. In this case, collaboration still occurs, just not through the form of co-authorship. Therefore, step 2 reminds the analyst to remain attentive to the relational dimensions of musical creativity, even when they are not immediately visible in the score or performance history.

Following the ethnography in Step 2 is Step 3, "Historical Context." This step uses the insight gained from steps 1 and 2 to inquire into the cultural, historical, and ideological conditions of a work's creation. It is important to note that the aim of this step is not to impose an external political narrative onto a musical work, but to ask how the work may or may not be shaped by the social world from which it emerged. As such, the difficulty of this step is entirely dependent on the work which it is based on. My project features two different works that both display a wide range of sociopolitical commentary. Saariaho's *Innocence* directly commentates on the nature of school shootings, news reports, and the discarded public memories of survivors. Therefore, this work has a direct throughline from the music to its politics, rendering this step relatively simple to design and execute. On the other hand, a work like Ko's *Breath, Contained* seemingly contains no political commentary or stance whatsoever. At best, from first glance, one might glean that the trilogy loosely involves issues of environmentalism through its solo feature of bubble wrap.

This leads into a discussion of the importance of sequencing in this method. Step 3 is thoroughly dependent on the foundation established in steps 1 and 2 and therefore should come after those steps. Without prior engagement with composers' intentions, creative processes, and collaborative networks, sociopolitical analysis risks becoming speculative, reductive, or even sensationalist. Even in the case of a work that has direct political commentary like *Innocence*,

primary source analysis helps to orient the analyst towards nuance. Steps 1 and 2, when applied to this work, reveal not only a desire to portray a modern violent phenomenon, but also a central concern with survivor narratives, long-term consequences of trauma, and ethical representation of the reality of public-facing violence. Without this information, this step might risk modelling the exact type of discursive framework that the creative team sought to resist by over-emphasizing the role of the shooter and his mental state at the time of the crime.

The importance of this sequence is especially relevant in cases where a work does not outwardly state its political stance. Unlike *Innocence*, Ko's *Breath, Contained* does not portray a direct political statement. However, inquiry into Ko's own research, artistic influences, and compositional values reveals a set of concerns aligned with modern feminist traditions in experimental music. These dimensions may not be found in the text of the work, but it can be discovered through primary source inquiry, then understood in and applied to the music.

With a nuanced understanding of the sociopolitical dimensions in which a piece was composed, the analyst can then feel confident in pursuing a deeper interdisciplinary investigation, often drawing on sociology, journalism, philosophy, or whatever disciplinary field feels best appropriate to better understand how a composer enacted their compositional and aesthetic values into their work. Therefore, step 3 does not seek to "decode" hidden political messages, project external narratives, nor put words in a composer's mouth. Rather, it seeks to place a work within the direct and indirect conditions that shaped it. By grounding this sociopolitical interpretation in the findings of earlier steps, this approach aims to avoid formalist isolation, instead allowing political meaning (if any!) to arise from the specific texture of each work's creative world.

Step 4, “Music Analysis,” at last, involves musical analysis. Progressing in sequential order through the steps, the analyst should use their findings from steps 1-3 to formulate a set of guiding questions that are specific to each work under consideration. Importantly, this approach prescribes the analytical approach in accordance with their guiding questions. It is sometimes the case that an analyst approaches a work in the opposite direction, with a fixed analytical tool in mind (such as set theory, Schenkerian analysis, Neo-Riemannian analysis, so on and so forth) that they then apply to the work. This approach to music analysis is—by all means—fruitful and helpful for understanding how these methods can be applied, but it risks asserting an uneven fusion of horizons between the interpreter and the work.

To facilitate a smooth fusion, the analyst should start with understanding the context of the composition through steps 1-3 (the horizon of the work), then develop a mode of analysis best suited to answer the questions that arise out of this research (horizon of the interpreter). While these questions can range in topics, they should generally revolve around the concepts and themes that emerged from the previous steps. It is ultimately up to the analyst, however, to pursue the avenues that best interest them, as any singular work can project numerous possible features, making an exhaustive analysis near impossible.

Depending on the nature of the work, this step may include formal, gestural, timbral, harmonic, rhythmic, metric, or a host of other possible methods of analysis. For some pieces, traditional formal analysis may be appropriate, but for others, especially more experimental practices, a more creative approach may be necessary. The interpreter should feel free to apply creative or unconventional methods of analysis, so long as they assist in answering the guiding questions. However, this step remains primarily descriptive and analytical rather than

interpretive. Step 4's task is to closely examine the musical materials and gather as much detail as possible to best articulate how musical processes unfold in time.

Step 5, "Interpretation," takes the observations from step 4 and returns to the guiding questions that initially shaped the analytical approach, interpreting these findings to determine what these musical details reveal about the work's aesthetic and cultural dimensions. This stage marks the point at which the horizon of the work fuses with the horizon of the interpreter through a dialogue between the analyst and the multi-faceted features of the work. The gathering of contextual and musical knowledge across steps 1-4 prepares the conditions for this fusion, then step 5 enacts that fusion.

However, because interpretation invites varying degrees of subjectivity according to the position of the analyst, Step 5 acknowledges the role of subjectivity without collapsing into relativism. Any claims made about the work should be grounded in the analytical evidence gathered in step 4, but they may remain speculative and responsive to the work. At the heart of this step is the hermeneutic premise that meaning is continually developed through acts of listening, analysis, and reflection.

Though the act of fusing horizons is complete in step 5, one last step remains. Step 6, "Cultural Elaboration," shifts perspective once more by zooming out from the individual work and understanding it within broader historical and theoretical lineages. This step's primary concern is to ask how the work participates in larger narratives that extend beyond its immediate context. Some of these lineages may be suggested through the research done in steps 1-3, but others may appear from the analyst's own interests and lines of inquiry. Step 6 therefore invites exploration rather than prescription.

An exhaustive historical survey is unnecessary for this step, due to how historical narratives often act like interconnected networks that stretch infinitely backward and outward. Attempting to account for every possible lineage would not only be impractical but would risk flattening the specificity of the work itself. For this reason, step 6 proceeds selectively and open-endedly, however, this selectiveness ultimately benefits both the analyst and the work itself. It allows the interpreter to pursue frameworks and lenses that feel conceptually relevant, while also leaving space for other scholars to place the same work within different narratives. In this way, Step 6 encourages a consistent dialogue between interpreters, allowing horizons to remain flexible and subject to renewal.

In practice, this means that different works will invite different kinds of inquiry. As an example of this flexibility, consider my analysis of Saariaho's *Innocence*. After completing steps 1-5 for 3 case studies within the work, I use step 6 as an opportunity to consider the opera within the discourses of postmodernism, memory studies, and trauma theory. While my previous research in steps 1-5 did not suggest postmodernism as an explicit lens through which Saariaho understands her own work, I include this lens as it reflects one of my own lines of inquiry throughout my time with the work. To counterbalance this subjectivity, I also consider the work alongside fields that the creators themselves explicitly engage, such as memory and trauma theory. The interaction between these perspectives leads to a rich and dynamic reading of the work.

An additional example of this can be seen in my approach to Step 6 for Ko's *Breath, Contained* trilogy. Although Ko's own dissertation provides a roadmap through the feminist experimental traditions of Judy Dunaway and late 20th-century cyberfeminism—a roadmap I explore in great depth in Step 3 for this work—Ko's treatment of bubble wrap as a found object

often reminded me of the lineage of *musique concrète*. Thus, for this step, I compare my findings from the previous steps to the philosophical foundations of *musique concrète* as defined by Schaeffer, as well as *musique concrète instrumentale* as defined by Lachenmann. In doing so, I find that my initial hypothesis that these concepts relate to Ko's work is only partially true.

It is important to note that the goal of step 6 is not to classify or assign a label to a work. Much like step 3, the goal of this step is exploratory rather than declarative. Rather than asking "is this piece postmodern?" or "should the composer have called this a piece of *musique concrète*?" this step instead inquires to how a piece contributes to ongoing artistic and intellectual conversations within the discourse of postmodernism. Perhaps *Innocence* is a postmodern work, perhaps it is not. The answer to that question is much less interesting than the discussions and explorations required to arrive at such an answer in the first place. By considering these broader narratives, this step concludes my methodology in a thematically satisfying way.

These steps may seem obvious (perhaps even unnecessary) at first, since many analysts engage in some degree of historical research before turning to musical analysis. However, this methodology differs from many approaches in a few important ways. First, it places ethnographic inquiry alongside historical and analytical inquiry as a central methodological component. As twenty first-century scholars studying twentieth- and twenty first-century music, we occupy a unique position in which composers, performers, conductors, and other musicians are often accessible through technology. In other words, you do not have to travel to another country to speak to a composer from another country. Thus, I emphasize the importance of ethnography in this approach. While ethnographic methods have long been common within

musicology and ethnomusicology, they remain comparatively uncommon (though not entirely absent) within music theory and analysis.

Secondly, the findings from Steps 1-3 are not intended to only provide contextual information before analysis. Rather, they actively determine the kinds of analytical questions the analyst poses. Instead of selecting a predetermined analytical system and applying it to a work, this approach encourages analysts to develop strategies in response to the concerns, values, and processes uncovered through these initial steps.

Additionally, the layout of these steps makes for a pedagogically friendly approach towards contemporary music analysis. I envision a version of this methodology that can be introduced to undergraduates in upper-level analysis courses. With adequate analysis tools provided, students can feel empowered to pick analytical tools that feel both relevant to the piece and relevant to their own interests in approaches, and the pre-analysis research steps can aid in helping students build good research skills. A final point should be made regarding the ordering of these six steps. While the methodology is presented sequentially here, there is a small degree of flexibility that can be granted to the analyst. However, the sequencing of these steps is essential. Certain stages are dependent on the research done in previous steps. For example, Step 3 (“Historical Context”) relies heavily on information gathered through Steps 1 (“Primary Sources”) and 2 (“Ethnographic Inquiry”), while Step 5 (“Interpretation”) depends upon observations gathered in Step 4 (“Music Analysis”).

At the same time, research rarely unfolds so neatly. It may be the case that insight gained in later stages prompts a return to earlier ones. An analytical observation in Step 4 may encourage further archival research in Step 1, while cultural questions raised in Step 6 require a

renewed engagement with Step 3. Thus, while the method proposes a general sequence of inquiry, it should also be understood as largely flexible.

Lastly, this methodology shares a common interest in musical meaning and cultural context with the field of semiotics, however, it differs in its primary object of inquiry. Musical semiotics, as described by Philip Tagg, seeks to understand how musical signs communicate socially recognizable meanings.[8] My concern is somewhat different, particularly in how this methodology focuses on the interpretive process rather than identifying systems of musical signification. Thus, while questions of meaning remain central to this project, they are approached through a hermeneutic rather than semiotic framework. However, should an analyst find the lens of semiotics useful in their execution of these six steps, they should feel free to engage with the field as they find appropriate.

Literature Review

After presenting my analytical method, I look now at the scholars and publications that have made this project possible. This project engages with a range of conversations across music theory and musicology concerning how best to approach a multi-faceted musical understanding. Although it can be tempting to distinguish between approaches that prioritize close engagement with musical details and those that emphasize the social and political contexts (among others), such distinctions often oversimplify the ways in which these perspectives interact in practice. Scholars have increasingly demonstrated that analytical and contextual methods are not mutually exclusive but are synergistic and symbiotic. This dissertation aligns with and builds upon these

[8] Philip Tagg. "Musicology and the semiotics of popular music." *Semiotica* 66, no. 1/3 (1987)

combined approaches, integrating musically detailed analysis with ethnographic inquiry to reach a fuller and more comprehensive understanding of contemporary works.

This literature review traces the lineage of scholars who have participated in this discussion. I start with an overview of musicological sources that call for greater consideration of the social relations that allow music to happen, including Cook (1990), Piekut (2011), and Goehr (1992), amongst others. I then discuss music-theoretical publications that remain sensitive to these aspects while still focusing on the musical object itself, such as Lochhead (2016) and others, moving towards what Julian Horton (2020) calls a "musicological necessity" for score-based analysis. Ultimately, I use these sources to justify the existence of my analytical approach that combines "externality" and "internality" into a singular analytical arc. In doing so, I argue that the technical details of contemporary works, as understood through the lens of the composer and their world, both enrich our understanding of music.

Musicological Sources:

Lawrence Kramer – *Interpreting Music*

As explained in my methodology section, much of my analytical thinking begins with Lawrence Kramer. However, while *Music as Cultural Practice* (*MaCP*) provides the scaffolding for my own six-step approach, Kramer's later work, *Interpreting Music* (2011), further develops his hermeneutical logic. In this later text, Kramer moves beyond his concept of "hermeneutic windows" as described in *MaCP* to describe interpretation as a performative act. He expresses this as a "communicative virtuality" where the music converses with the listener/analyst in an active dialogue. He continues to assert that musical meaning is not a static property, but it is

"performed" and "staged" by the interpreter through the act of interpretation itself.[9] Put differently, this publication more seriously considers the role of the interpreter in creating musical meaning. This offers a conceptual flexibility that informs the adaptations I make in analyzing works like *Innocence* and *Breath, Contained III*.

Kramer's hermeneutic frameworks, both in his earlier and later career, are the nucleus of my analytical method. However, both publications remain largely tethered to the Western canon. Even in discussions of modern music, he uses works from pre-1945 Europe as examples. He rarely addresses how his method might translate to contemporary works that push against the boundaries of music traditions. I build on Kramer's logic by continuing to extend it to a wider repertoire, including works that both engage in contemporary political commentary in the case of *Innocence*, and experimental works that feature pitch-less instruments in the case of *Breath, Contained*. By applying Kramer's hermeneutics to these works, I adapt his logic for a 21st-century musical context. This expansion allows me to combine his analytical logic with the repertoires that are currently shaping the contemporary canon.

Roger Savage – *Hermeneutics and Music Criticism*

In Roger Savage's *Hermeneutics and Music Criticism* (2009), he extends the insights of philosophical hermeneutics into the field of music criticism. Like myself, he draws heavily on Gadamer's concept of fusion of horizons to examine how musical meaning can be created through acts of interpretation, rejecting previously held notions of music as an autonomous object with a singular truth that musical analysis unveils. Much like my own approach towards musical analysis, Savage argues that musical understanding occurs through the dialogic encounters between listeners and works. In these cases, both historical context and present

[9] Lawrence Kramer, *Interpreting Music* (Berkeley: University of California Press, 2011), 15.

experience contribute to the production of meaning which in turn emphasizes the importance of historical situatedness and interpretive openness. His work therefore contributes largely to the broader hermeneutic discourse within both musicological and music-theoretical fields.

Savage's work is useful for this project because of how he demonstrates the application of Gadamerian interpretation to music scholarship. In many ways, Savage and I share similar goals and similar attitudes towards musical analysis. His emphasis on understanding music through engagement with historical and cultural dimensions aligns closely with the aims of this dissertation. However, this present study expands this hermeneutic orientation through the incorporation of ethnographic inquiry and music-analytical investigation in an attempt to recontextualize the role of music analysis within the field of hermeneutics.[10]Christopher Small – *Musicking*

Christopher Small's *Musicking* (1998) further contributes to the foundations that create my method. In this publication, Small aims to direct analytical attention away from music as an object (collections of scores, recordings, manuscripts, etc.) and more towards *musicking*—the act of people creating, engaging, listening to, rehearsing, and dancing to music.[11] In doing so, Small highlights relationships between performers, audiences, music, and social context, encouraging analysts to attend to all roles in a performance.

In Chapter 5, "A Humble Bow," for example, Small conducts a quasi-ethnographic reading of a symphony rehearsal, describing and analyzing the choral and orchestral preparation of Beethoven's Ninth Symphony. Through this discussion, Small asserts that the meaning of a

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[10] Savage, *Hermeneutics and music criticism*, 2009.

[11] Christopher Small, *Musicking: The Meanings of Performing and Listening* (Hanover, NH: Wesleyan University Press, 1998), 9.

musical work is not a semiotic property of the score or the product of a lone genius composer but is instead located in the relationships required to bring the work to the stage, including the social, spatial, and hierarchical aspects generated by the act of performance. He notes that these relational aspects, such as physical arrangement of the choir, the gestural authority of the conductor, and the synchronized labor of the instrumentalists constitute a "pattern of relationship" that resemble something like a social order. He finds that the performers' coordination at the behest of a singular conductor can be read as a metaphor for larger communal or institutional hierarchies.[12]

This relational model is a direct influence for Step 2 of my methodology, where ethnographic inquiry is used to better understand the work in its creation and reception. Where *Musicking* stops short of my approach is in its scope of repertoire (in part due to its publication in 1998, before the turn of the 21st century) and its analytical rigor. While Small does extend his inquiries into non-Western-canon music (such as West African communal music, Balinese Gamelan, and early 20th-century jazz practices), I further extend his approach by applying his relational model to experimental and contemporary music. Additionally, Small insists on not integrating his social insights with close structural analysis to examine how these social interactions might manifest in musical parameters. I aim to extend Small's approach by investigating how social and cultural engagement can be reflected in musical details.

Lydia Goehr – *The Imaginary Museum of Musical Works*

Lydia Goehr's *The Imaginary Museum of Musical Works* (1992) provides another precedent critical to understanding my approach to musical analysis as a process rather than a static object. In this work, Goehr argues that our modern engagement with music is mediated by

[12] Small, *Musicking: The Meanings of Performing and Listening*, 67

19th-century regulative norms that encourage score autonomy, fidelity (*werktreue*) and single authorship. She refers to these set of norms as the "work-concept," and encapsulates this attitude towards music in the metaphor of an "imaginary museum," where scores—like works of visual arts—are placed on pedestals, high above an observing crowd that witnesses them as singular, perfect, untouchable objects that must be deified with faithfulness in performance, silence from concertgoers, and worship from analysts.[13] Goehr aims to denaturalize this work-concept and the museum to allow scholars to question it, politicize it, and discuss the scaffolding behind these beliefs.

Her critical approach is best exemplified in Chapter 9 where she discusses J.S. Bach's *St. Matthew Passion* and the retroactive application of the work-concept to his music.[14] She notes that this piece was originally created for a functional sacred event, but Mendelssohn's revival of Bach transformed it into an autonomous "work" for the concert hall, placing it within a display case in Goehr's museum. She calls this "conceptual imperialism,"[15] comparing this retroactive reshaping to colonization of musical time and space. This approach allows me to argue that work-concept frame is ill-fitting for 21st century pieces like *Innocence* and *Breath, Contained*, which, like Bach's original liturgies, prioritize the event of music over the object of music.

However, Goehr's project remains primarily diagnostic. Her research shows the historical and ideological scaffolding of musical works, but she does not offer a method for interpreting individual pieces and musical detail once that scaffolding is acknowledged. In other words, the work-concept idea is destabilized, but no alternative analytical practice is demonstrated. This is

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[13] Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (Oxford: Oxford University Press, 1992), 243-253

[14] Goehr, *The Imaginary Museum of Musical Works*, 243

[15] Goehr, *The Imaginary Museum of Musical Works*, 248

where my six-step method contributes to Goehr's discussion. I take Goehr's critiques of the canon through her work-concept and embed it within my approach, ensuring that analyses of works reflect the dynamic, collaborative, and discursive nature of creation, especially in the 21st century.

Born – *Rationalizing Culture*

Georgina Born's *Rationalizing Culture* provides an ethnographic analysis of the IRCAM in Paris in the second half of the 20th century. In her evaluation, Born exposes the IRCAM as a social world shaped by creative hierarchies and competing ideologies that illuminate the tense relationships between music, money, emerging technologies, and institutional politics. One of the more striking examples appears in her analysis of the interactions between composers and technical staff, the latter of whose labor is routinely framed as instrumental rather than creative. Despite the necessity of the technical staff's work in creating and maintaining the mechanical and technological components of the institution, the technical staff's musical contributions are absorbed into the figure of the composer, reinforcing outdated authorial models of singular authorship.[16] In exposing these interactions, Born argues that the IRCAM's music reflects a broader conflict between modernism, bureaucracy, and culture.

Her perspectives complement my own emphasis on the importance of collaborators, institutions and cooperative processes as central to musical meaning. Like Born, I also treat musical works as products of social systems rather than isolated artistic statements. Where my project extends her work is in its analytical focus. Though the works I analyze can be traced back to the IRCAM (with Saariaho having studied and written works there in the 80's, and Ko

[16] Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley: University of California Press, 1995) 234-244

utilizing the IRCAM program ORCHIDEE in her work *Breath, Contained III*), the pieces I feature extend out of the institution and into broader cultural politics. Furthermore, while Born does attend to musical details at times, (e.g. in her analysis of Boulez's *Répons* (1981))[17] my approach aims to utilize more analytical rigor, guided by questions that the analyst determines based on context derived from steps 1-3. Thus, *Rationalizing Culture* provides a critical example for understanding how contemporary music is made under institutional and cultural influences, and I seek to connect this logic to the sounding details of the music itself.

Nicholas Cook – *Music, Imagination, Culture*

Nicholas Cook's *Music, Imagination, Culture* (1990) provides further scholarly support for my methodological rejection of positivistic analysis. He does this by distinguishing between two modes of listening: musical and musicological. To engage in musical listening is to listen for the sake of enjoyment or aesthetic experience. Musicological listening, on the other hand, involves listening for the sake of analysis or identifying structures. The crux of Cook's argument, however, is that musicological listening is often a fictional construct and that many trained musicians cannot hear tonal structures the way they are often taught. Though I suspect this to be only partially true, Cook's most significant contribution to this discussion is that much musical meaning and formal understanding occurs in the imagination of the listener—not in the score, performance or recording.

To demonstrate this gap between perception and imagination, Cook conducted a series of experiments using a group of undergraduate music students. He presented them with short piano pieces (including excerpts from Liszt's *Fünf Kleine Klavierstücke*, and Brahms's *Variations and Fugue on a Theme by Handel*) that featured significant formal alterations. Cook modified the

[17] Born, *Rationalizing Culture*, 180-186

pieces so that they ended in a different key than they began or otherwise disrupted the internal tonal symmetries. The results from the test revealed that the students failed to perceive these large-scale tonal "errors," often preferring the altered versions to the originals.[18]

Cook utilizes the "failure" of listener's abilities to hear large structural forms to argue that formalist analysis is an intellectually redundant exercise that bears little relation to the experience of music. However, I content that the "imaginary" status of analysis does not render it unnecessary. Rather, it renders it a creative and hermeneutic act of the interpreter. The dismissal of structural analysis due to this subjectivity assumes that the goal of musical analysis is to unveil a "true" analysis with which all listeners can agree. However, a central tenet of my approach is that multiple "truths" can exist at once, and that all meaning found in music is largely subjective. Thus, despite the seemingly contradictory nature of Cook's work to my own approach, this publication's emphasis on imagination and framing aligns closely with my own refusal to treat meaning as self-evident.

In addition to my reframing of this imaginary subjectivity, where my project diverges from Cook's is in its methodological scope. While Cook's readings concentrate primarily on reception and interpretive work of listeners, I swap this process, focusing first on the conditions of musical creation and using those insights to guide how listeners and analysts may interact with the work. *Music, Imagination, Culture,* therefore, provides a model for understanding how meaning can be subjectively constructed, where I then go on to ask how that construction begins before the work reaches the audience.

Benjamin Piekut – *Experimentalism Otherwise*

[18] Nicholas Cook, *Music, Imagination, and Culture* (Oxford: Clarendon Press, 1990), 52-59.

Benjamin Piekut's *Experimentalism Otherwise* (2011) provides a different musicological perspective that informs my project, specifically that of social ontology. While the other authors in this literature review might explore aspects of community, groups, ensembles, and their social hierarchies, Piekut draws specifically on Latour's Actor-Network Theory (ANT) to explore how musical works are contingent assemblies. He argues that we cannot understand a composition by looking at the score alone and that we must instead map the practices and material conflicts that allow a performance to take place.[19]

An example of this appears in his exploration of primary source accounts of the 1963 ONCE Festival and how Iggy Pop was gradually introduced into the experimental scene at Ann Arbor through such festivals. Piekut examines the coordination of emerging technology, institutional funding, political tensions, and the distributed agency of performers.[20] By focusing on the experiences of participants in this festival, Piekut proves that the limits of experimentalism are not only defined by these ANT-specific features, but also by the social networks that include or exclude specific voices based on race, gender, and institutional access.

Piekut's methodology validates my claim that meaning in *Innocence* or *Breath, Contained* is found in the specific interactions between composers, creatives, and performers. While Piekut's work remains primarily historical and sociological, my project seeks to bridge his ANT model with the sounding details of the music. Specifically, I use my Steps 4 and 5 to ask how these conflicts and interactions (such as Ko's physical and technological mediation of bubble wrap) are encoded in the music itself. Thus, Piekut's work allows me to effectively bridge the ethnographic data of my project with analytical rigor.

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[19] Benjamin Piekut, *Experimentalism Otherwise: The New York Avant-Garde and its Limits* (Berkeley: University of California Press, 2011), 7-19.

[20] Piekut, *Experimentalism Otherwise: The New York Avant-Garde and its Limits*, 177-198.

Music-Theoretical Sources:

Parsons & Ravenscroft – *Analytical essays on music by women composers*

In *Analytical Essays on Music by Women Composers* (2016), editors Parsons and Ravenscroft seek analytical equity for women composers. Their core claim is that the historical marginalization of women in music theory is perpetuated not only by exclusion from the Western canon, but also by a lack of rigorous and technical scrutiny of their scores. They claim that when music by women is analyzed, there is an overt emphasis on their biography, more so than there is when approaching male composers. They seek to "re-center" this lens by eschewing biographical details in favor of applying advanced theoretical framework to the music of women. By doing this, the contributors in the volume aim to better engage with the structures of their music.

A primary example of this is in Volume 1, Chapter 7, where author John Roeder analyzes Saariaho's song cycle *From the Grammar of Dreams* (1988), a piece written during her time at the IRCAM. This period was largely defined by male-dominated discourses surrounding spectralism and computer-assisted composition, with only a small handful of women circulating through the program at this time. Roeder uses a combination of rhythmic and pitch analysis to demonstrate how Saariaho articulates the poetic structure of Sylvia Plath's "Paralytic."[21] This discovery positions her alongside her male spectralist peers such as Grisey, Murail, and Harvey, proving that her music portrays the same level of structuralist intensity as her male peers.

This volume provides a crucial precedent for the detailed readings I undertake in my analysis of Saariaho's *Innocence*. Furthermore, the analyses model an approach that prioritizes secondary musical parameters like timbre, texture, and register over traditional tonal structures.

[21] John Roeder, "A Theory of Cyclic Voice-Leading for the Music of Kaija Saariaho," in *Analytical Essays on Music by Women Composers: Concert Music, 1960-2000*, ed. Laural Parsons and Brenda Ravenscroft (New York: Oxford University Press, 2016).

This approach is especially important for my consideration of Ko's *Breath, Contained* where the pitch-less solo bubble wrap demands an analytical framework that reconsiders the necessity of tonality. However, where my project diverges is in the scope of the analysis. While I retain their commitment to structural details in my Step 4, the overall approach of my methodology treats these technical findings as only a part of the overall understanding of the work. In other words, I use the collaborative, creative, and sociopolitical information gathered in steps 1-3 to better understand the musical details of the score. In doing so, I extend Parsons' and Ravenscroft's formalist project outwards, arguing that technical detail and social context are mutually constitutive forces in the creation of contemporary meaning.

Judy Lochhead – *Reconceiving Structure in Contemporary Music*

In *Reconceiving Structure in Contemporary Music* (2016), Judy Lochhead proposes an alternative to the structural paradigms of the 19th-century "work-concept" for 21st-century repertoire. Lochhead's core claim is that musical structure should be understood as an emergent phenomenon of the listening experience. In other words, she argues in favor of phenomenological readings of contemporary repertoire. Lochhead further advocates for a change from "prescriptive" analysis, which seeks to fit music into pre-existing formal containers, towards "investigative mapping," an open-ended process that charts the affective and gestural qualities of sound as they unfold in time. Thus, Lochhead's work provides a necessary precedent that informs my methodology, specifically in asking how gestural and experiential knowledge of music can inform structural analysis.

An example of Lochhead's approach is in her analysis of Saariaho's *Lonh* (1998). Here, she relies on the experience of listening to the work as an entryway into her analysis, focusing on the immediate presence of the sound. In doing so, she uncovers what she calls musical

"radiances," comprehensive formal properties that arise from musical procedures in the work. She identifies a logic of ebbs and flows in the opera's texture, where the music fluctuates in the density of spectral clusters. From here, Lochhead reveals that Saariaho creates formal coherence in her work through the accumulation and dissipation of energy as an alternative to the tonal symmetry of traditional operas.[22] This discovery proves that the opera possesses a level of coherence on the perceptual level, something that score-based analysis can miss. Thus, for Lochhead, the analyst's role is to understand musical structure as a map of affective intensities, which allows each work to define its own formal boundaries.

This understanding is indispensable for my own methodology, specifically in the ways I bridge ethnographic context (Steps 1-3) with formal analysis and interpretation (Steps 4-5). Lochhead provides a necessary model for my approach towards allowing each work to demand its own model of analysis. In addition to providing a precedent for analyzing Saariaho's operas, her approach exemplifies a framework that allows me to argue in favor of structure and coherence in *Breath, Contained* via gesture and sonic contrast, despite the improvisational and pitch-less nature of the work.

Dora Hanninen – *A Theory of Music Analysis*

In Dora Hanninen's *A Theory of Music Analysis: On Segmentation and Associative Organization* (2012), she describes a new metatheory on analytical approaches towards music built on a logic of associative organization. She claims that musical coherence can be found through identification of perceptual and cognitive groupings.[23] This provides me with an

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[22] Judy Lochhead, *Reconceiving Structure in Contemporary Music: New Tools in Music Theory and Analysis* (New York: Routledge, 2015), 105-122.

[23] Dora A. Hannien, *A Theory of Music Analysis: On Segmentation and Associative Organization* (Rochester, NY: University of Rochester Press, 2012), 19.

essential precedent for how to group and analyze music that does not adhere to traditional pitch-centered (whether tonal or atonal) hierarchies.

In Chapter 2, she introduces three such perceptual orientations: disjunction (D), association (A), and theory (H). These orientations are then used to justify three domains of criteria: the sonic (S), the contextual (C), and the structural (T) (respectively) which are used to create segments in music that can then be analyzed.[24] Crucially, Hanninen asserts that the structural (T) criterion can rarely exist on its own and must coexist alongside sonic (S) and/or contextual (C) criterion. Thus, Hanninen's metatheoretical model asserts that observations cannot exist solely in the score but must be also aurally perceived. For my analysis of Ko's *Breath, Contained*, Hanninen's sonic criteria (S) provide a means for segmenting phrases and analytical units from the timbral profile of the bubble wrap ("pops" versus "crinkles" versus "swooshes," etc.). By using these observations combined with structural criteria (T), I can trace how these sounds change in perceptible ways to create segments in the music, which, together, create a form. This allows me to map the work's structure even if the work is largely improvisatory, and in doing so, I uncover Ko's penchant for subverting structural expectations.

Where my project departs from Hanninen is in the curation of analytical data points. Hanninen sticks close to the score and the sounding object itself. My six-step methodology insists that any associative choices should be informed by the ethnographic data from Steps 1 and 2. For example, I might associate two disparate gestures in *Innocence* or *Breath, Contained* not just because they sound similar (as in Hanninen's description of sonic criteria), but because my interview with the composer revealed that the two gestures were born from the same creative

[24] Hanninen, *A Theory of Music Analysis: On Segmentation and Associative Organization*, 19-73.

intention. In this way, I use Hanninen's rigorous associative logic to help me structure my analyses while also employing ethnographic inquiry.

Julian Horton – "On the Musicological Necessity of Musical Analysis"

In "On the Musicological Necessity of Musical Analysis" (2020), Julian Horton attempts to bridge the ideological divide between New Musicology and music theory by advocating for a mediatory methodology. Horton rejects the exclusionary attitudes that advocate in favor of pure musicology analyses or pure structural analysis by arguing that both are mutually synergistic. Without both, any interpretation of musical "meaning" remains speculative and groundless.[25]

This article provides a model and a philosophical justification for the integrated nature of my six-step method. Specifically, his critique of the "internalist/externalist" divide is crucial for understanding how I combine Steps 1-3 with Steps 4-5, and ultimately, Step 6. Horton demonstrates in this article that the internal logic of a composition can reveal how sociopolitical tensions (particularly those of postmodernism and late capitalism) are transformed into aesthetic structure.[26] Following Horton, I argue that the musical details of Saariaho's *Innocence*, and Ko's *Breath, Contained*, are the means through which the composer's social and political worlds are both articulated and reflected.

Horton's work ultimately provides a significant precedent for the type of combined "analytical musicology" that I undertake in this dissertation. However, I extend Horton's application of his logic from the 19th-century canon to 21st-century concert music. In doing so, I prove that this combined approach of structural and musicological analysis is useful for understanding how contemporary works reflect the lives and concerns of the composers, while

[25] Julian Horton, "On the Musicological Necessity of Musical Analysis," *The Musical Quarterly* 103, no. 1-2 (2020): 62-104.

[26] Horton, "On the Musicological Necessity of Musical Analysis," 77.

ensuring that my readings of these works are rooted in the "musicological necessity" of the sound itself.

Additional Sources - Archival/Ethnographic Precedents and Avant-Garde Analysis

Beyond the primary theoretical frameworks established above that outline the musicological/music-theoretical divide regarding the importance of structural analysis, this dissertation is inspired by the growing body of research that prioritizes both ethnographic inquiry and the collaborative processes that allow a musical work to come into existence. While a comprehensive survey of the field of ethnographic studies in music is beyond the scope of this review, several key studies demonstrate the efficacy of combining ethnographic/archival data with structural analysis.

In his study of the contemporary music scene, John Pippen (2014) provides an ethnographic model for understanding the "post-modern avant-garde" as more than an aesthetic. He identifies the complex social network of performers, institutions, and labor that contribute to the genre.[27] Similarly, Howell's, Hargreaves's and Rofé's (2011) interviews with Kaija Saariaho offer a multifaceted portrait of her creative "visions," emphasizing the importance of the composer's own voice in decoding her aesthetic output.[28] Complementing these approaches, Morrison (2021) recovers Saariaho's archives from the IRCAM to demystify and understand

[27] John Pippen, "Toward a Postmodern Avant-Garde: Labour and Performance in American New Music" (PhD diss., University of Western Ontario, 2014).

[28] Tim Howell, Jon Hargreaves, and Michael Rofé, eds., *Kaija Saariaho: Visions, Narratives, Dialogues* (Surrey: Ashgate Publishing, 2011).

how she used technological innovations to create her works.[29] Other studies that complement this approach well are: Calico (2019)[30], Born (2017)[31], and Ouzounian (2020)[32].

Together, these works establish a precedent for the "behind-the-scenes" research central to my Steps 1 and 2. I argue that the insights gained from such inquiries are essential to unearth the structure and logic of the works studied in the following chapters.

In addition to the aforementioned ethnographical models, much of my method also draws from analytical approaches focused on avant-garde and post-tonal music. These approaches depart from traditional pitch- or harmony-centered models and instead prioritize secondary parameters like gesture, texture, timbre, and temporality, reflecting a broader trend in the 20th and 21st centuries that explores expressions of form via processes that reject conventional schemas. The following authors aided in helping me further understand how to approach the two works featured in this dissertation.

In his 2011 book *Music and the Elusive Revolution: Cultural politics and political culture in France, 1968-1981*, Eric Drott examines how Saariaho's spectralist works created while studying at the IRCAM are representative of the social and institutional politics of late 20th-century France. He argues that the technical innovations of spectralism were more than extensions of scientific breakthroughs of the era. Specifically, he posits that this genre was deeply entangled with the cultural politics of late 1960s-1970s France and the state's desire to

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[29] Matthew D. Morrison, "Encoding Post-Spectral Sound: Kaija Saariaho's Early Electronic Works at IRCAM, 1982-87," *Music Theory Online* 27, no. 3 (September 2021).

[30] Joy H. Calico, "Composing Clémence in *L'amour de loin*," Contemporary Music Review 38, no. 3-4 (2019): 389-417.

[31] Georgina Born, Eric Lewis, and Will Straw, eds., *Improvisation and Social Aesthetics* (Durham, NC: Duke University Press, 2017).

[32] Gascia Ouzounian, *Stereophonica: Sound and Space in Science, Technology, and the Arts* (Cambridge, MA: MIT Press, 2020).

institutionalize the avant-garde. My work takes Drott's critical approach and extends it beyond the IRCAM by applying it to *Innocence*.[33] Though this work was created outside of institutional boundaries, I nonetheless investigate how its musical language engages with and reflects broader cultural and aesthetic discourses, especially in its treatment of memory, trauma, and collectivity.

Complementing this critique, Antares Boyle's research into experimental music further inspires my methodology by providing a model for analyzing works that defy traditional structures. In her 2023 article "Gestural Temporality in Sciarrino's Recitativo Oscuro," she shows how musical structure in contemporary avant-garde works is often a property of "gestural behavior," and how gestures and their contextual segmentation can create a sense of form.[34] This directly informs my approach to Ko's *Breath, Contained* trilogy, as this work features salient forms that are created despite the lack of pitch available to the solo object (bubble wrap).

These studies in avant-garde music and ethnographic research serve as a model for how to integrate cultural and political considerations into analytical models. This dissertation further contributes to this field by demonstrating how musical structure can be uncovered from examining interactions between materials, performers, and socio-cultural context.

Roadmap

The following chapters apply my six-step analytical framework to Kaija Saariaho's *Innocence*, and Tonia Ko's *Breath, Contained* trilogy. I begin in Chapter 2 with *Innocence*, broadly executing steps 1-3 to examine how the creative team sought to portray gun violence in

[33] Eric Drott, *Music and the Elusive Revolution: Cultural Politics and Political Culture in France, 1968-1981* (Berkeley: University of California Press, 2011).

[34] Antares Boyle, "Gestural Temporality in Sciarrino's *Recitativo oscuro*," *Music Theory Online* 29, no. 4 (December 2023), https://doi.org/10.30535/mto.29.4.9.

their production. Then, I execute a musical analysis via three case studies: Act 1, Scene 3 (“The Aftermath”), Act 3 Scene 13 (also titled “The Aftermath”), and Act 4 Scene 19 (“Before the Shooting”). In combining my ethnographic inquiry with musical analysis, I argue that Saariaho’s score functions as a reflection of the creative team’s goal to portray collective memory, trauma, and survivorship. Chapter 3 pivots to Ko’s *Breath, Contained* trilogy. Using *Breath, Contained II* and *Breath, Contained III* as distinct case studies, I map the evolution of bubble wrap in Ko’s repertoire from a source of creative inspiration to a primary musical determinant. Here, I integrate Hanninen’s associative organization with Lochhead’s reconceiving of structure to show how Ko utilizes the physical constraints of her materials to dictate the formal trajectory of the work. Finally, the Conclusion reflects on how these musicological and music-theoretical approaches synthesize and synergize to offer a new path forward for the musicological necessity of analysis in 21st century music.

CHAPTER 2

KAIJA SAARIAHO'S *INNOCENCE*

Introduction

Innocence (2021) is the result of nearly a decade of collaboration between composer Kaija Saariaho, librettist Sofi Oksanen, and dramaturg-linguist Aleksi Barrière. The opera details the aftermath of a fictional school shooting in Finland that killed ten students and one teacher. However, paradoxically enough, it opens at a wedding reception. Tuomas, the younger brother of the shooter, is marrying Stela, a woman he met while on vacation to Romania who has no knowledge of the tragedy. The drama rotates (both dramaturgically and literally) between two domains: the "real world" at the wedding, and the "realm of memories" where survivors recount their experiences with the violence. In the former, Tuomas's family wrestles with what to do with their estranged criminal son, who has been recently released from prison. They struggle, too, with the choice of whether to conceal the incident from Stela forever or confess to their past. In the latter realm, the survivors and the ghost of Markéta reflect on their lives before, during, and after the attack.

This chapter examines how Saariaho shapes each character through distinctive musical identities, and how those identities represent broader experiences of individuality and collectivity. Across 13 characters and 9 languages, Saariaho assigns rhythmic motifs, melodic collections, and orchestral textures to each character that sonically signify their presence. Through such musical associations, she constructs these characters as individuals entwined in a complex web of memory, trauma, guilt, and survival.

However, these musically associative character identities rarely remain discrete. They overlap, collide, and merge, mirroring the complex process of recovery and, as we will find

throughout the analysis, complicity. The voices of the survivors dominate, hesitate, interrupt one another, and coexist uneasily within the same sonic world. I trace how these interactions are manifested musically to show how Saariaho both differentiates and binds characters through her music, constructing a world haunted by the permanent aftereffects of tragedy.

This chapter proceeds with my six-step method. Steps 1-3 establish the contextual foundation. Step 1 synthesizes primary sources from the creative team, where I will extract the recurring themes of individuality versus collectivity, trauma, healing, and secrecy. Step 2 investigates perspectives from musical collaborators outside of the creative team. Step 3 examines the journalistic landscape of violent, gun-related crimes during the work's creation, focusing on the media's approach towards violent perpetrators, spectacles of tragedy, and survivor visibility. Building on this foundation, I continue to steps 4 and 5 through three case studies: Act 1 Scene 3 ("The Aftermath"), Act 3 Scene 13 (also "The Aftermath"), and Act 4 Scene 19 ("Before the Shooting"). For each case study, I carry out steps 4 and 5 together, where I will apply motivic analysis guided by questions derived from steps 1-3. Step 6 then zooms out, understanding these findings within broader cultural narratives such as postmodernism, memory theory, and trauma theory. In summary, steps 1-3 provide context, steps 4-5 present detailed musical analysis, and step 6 theorizes *Innocence* in relation to its historical and cultural *zeitgeist*.

Step 1 – Primary Sources:

Step 1 analyzes primary source material related to the development of *Innocence*. My goal is to reconstruct a loose timeline of its creative unfolding and by doing so, uncover key themes that consistently appeared through its conception. This analysis will reveal four thematic concepts that guided the opera's creation from its earliest stages to the final iteration: trauma,

healing, the tension between individual and communal experience, and the weight of secrecy. These themes will provide an understanding for the musical analyses in steps 4 and 5 and will help to explain how Saariaho and her collaborators shaped the musical and dramatic world of the opera.

The *Innocence* project began in 2013, when Saariaho received a commission from the Royal Opera House while working on *Only the Sound Remains* (2015). She imagined her next opera as a "maximalist" work--one that expanded in every dimension, including numerous characters, languages, and soloists.[35] To achieve this goal, she invited two collaborators: novelist Sofi Oksanen and her son, linguist/dramatist Aleksi Barrière.[36] Together, this trio became the creative center of *Innocence*.

Saariaho's first concept for the opera, originally titled *Fresco*, envisioned thirteen strangers gathered before Leonardo da Vinci's *Last Supper*. These characters would exist together and experience the same artwork, but the opera would highlight their distinct individual impressions.[37] In an interview with Music Makers's James Jolly, Saariaho elaborates on this:

> James Jolly: I mean, what drew you to [a school shooting] as a theme because, I mean, it is quite a shocking theme. It's sort of--it's an opera about a kind of terrorist event. What drew you to that particular subject matter? Because it's quite a jump from stuff you've done before. You know, it's a very visceral in-your-face kind of theme.
>
> Kaija Saariaho: It was not that subject matter at all. It was the idea of how a group of people leave one event always so differently, and what kind of event it would be. I was imagining a group of tourists coming to see the Leonardo da Vinci's *Last Supper*. And there are these 13 persons, these groups, Japanese tourists, and they are all in front of that painting. And then, what goes on in their life? They encounter all these people

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[35] Kaija Saariaho, interview by Liisamaija Hautsalo, "Innocence opera Symposium at Finnish National Opera," YouTube, February 14, 2023, https://www.youtube.com/watch?v=3yIP1g7qWbQ

[36] Kaija, Saariaho, "Innocence," *Kaija Saariaho*, accessed August 29, 2025, https://saariaho.org/works/innocence

[37] Saariaho, "Innocence opera Symposium"

> accidentally. Does it have something to do with their life? What do they think about those 13 persons? Do they know about their history and all that? So that was my first idea.[38]

Thus, from its conception, *Innocence* was not about violence, politics, or tragedy, but rather an exploration of how diverging perspectives can be born from a mutually shared experience. This thematic concern survived through every later revision.

As the idea evolved, Oksanen and Barrière helped ground it in a narrative. In speaking about how she devised the libretto, Sofi Oksanen elaborates on how the difficulty of deciding a setting:

> Oksanen: From the beginning, Kaija wanted it to be multilingual, and another thing was that Kaija wanted all the performers to be on stage throughout the piece. These were the two things Kaija had thought about. They, in turn, determined for me what the opera could be like in terms of subject matter and theme. Then there was the fact that the sponsors wanted an opera set in the present, which is actually rare… It was clear that it had to be an event. Because only an event makes it natural for people to be on stage all the time and for them to have their own functions that don't need to be explained. Take a trial, for example… A trial would have been good in the sense that different people have clear roles in it and it's easy to demonstrate why they are in the same place. The wedding came to us quite quickly, because weddings are also a time when people have clear roles. An event where we would have to explain people's roles wouldn't have been good. There simply wouldn't be time or space for that. So, in the final analysis, we settled on a wedding as the event.[39]

Barrière also elaborates on how the collaborators connected the setting of a wedding with the concept of *Fresco*:

> Barrière: Kaija had the idea to call the project a fresco, and one of the most famous frescoes that she had in mind was Leonardo da Vinci's *Last Supper*… We see thirteen figures behind the table, and we know that something is happening. Da Vinci situated the painting at the moment when it became clear what is happening and who is to blame… It is quite interesting that, freely associating with da Vinci's fresco, we came up with the idea of wedding pictures or a wedding table, and that remained as a distant reference in this production. That it connects to a wedding, to wedding photos, where everyone is

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[38] Kaija Saariaho, "musicmakers: Kaija Saariaho – An exclusive video podcast hosted by James Jolly," YouTube video, 1:14:29, posted by medici.tv, March 21, 2023, https://www.youtube.com/watch?v=WMcRl4gl9bc

[39] Sofi Oksanen, "Innocence opera Symposium"

> smiling despite knowing something has happened and there are secrets… We also talked about newspaper stories. We were interested in these questions, in violence, in trauma and so on.[40]

In these quotes, it becomes clear how literary practicality transformed Saariaho's original *Fresco* concept into something closer to *Innocence*. Her original meditation on shared experience transformed into a wedding reception, where roles are clear and secrets can fester beneath the surface. Crucially, the idea of secrecy appears here for the first time. This particular thematic concern in particular is present in the "real world," that is, the wedding reception, rather than the "realm of memories" where characters relive the past tragedy. Nonetheless, the topic of secrecy becomes especially important to the latter half of the opera, where concepts of guilt and innocence are complicated through secrets that are ultimately revealed at the climax.

The final major development in the conception of *Innocence* came when the collaborators chose to frame the opera's tragedy around a school shooting. In response to the journalistic climate of mid-2010's European and international news (further examined in step 3), they approached this topic with caution. They rejected sensationalized treatments of perpetrators and focused instead on survivors, families, and communities. As Oksanen notes, news often emphasized the spectacle of violence as opposed to its aftermath: "The coverage focused a lot on the hunt for the terrorists… but not on the long-term effects of such an act of violence on the community, the relatives, and the families. In a way, that's never the headline...As a genre, opera is very long-lived and it is likely that future generations will see this opera but won't watch those true crime shows at all." Saariaho echoed Oksanen's sentiment: "What interested me and all of us was how such a crime affects the wider network of people… how you have to live with the

[40] Aleksi Barrière, "Innocence opera Symposium"

trauma, how horrible it is."[41] This perspective anticipates the opera's long-term ethical impact for future generations.

All together, these reflections chart the creative unfolding of *Innocence*: first, a commission in 2013, followed by the recruitment of Oksanen and Barrière, then the *Fresco* concept inspired by da Vinci's *Last Supper*, proceeded by its transformation into a wedding where they became interested in secrets, and finally, the decision to dramatize the emotional aftermath of a school shooting. Through this timeline, the themes of trauma, survival, individual versus communal experience, and secrecy repeatedly appear as central to their creative vision. Building on this foundation, Step 2 will explore interviews with musical collaborators outside of the creative team to uncover additional perspectives and understand Saariaho's collaborative musical process.

Step 2 – Ethnographic Inquiry:

The second step in this chapter turns now towards performers and collaborators. The goal of this step is to understand *Innocence* through performer perspectives, focusing on the experience of the musicians, directors, and conductors who worked with Saariaho to interpret and transform her score into performance. This section will draw on interviews and writings of several of those who were involved in the opera's premiere: Vilma Jää (Markéta), Magdalena Kožená (Tereza), Susanna Mälkki (conductor), and Simon Stone (director). By assembling these perspectives, Step 2 contributes to our understanding of *Innocence's* conception through description of collaboration and performer contribution.

[41] Saariaho and Oksanen, "Innocence opera Symposium"

I begin with Vilma Jää's 2021 Q&A with *OperaWire*. In this interview, Jää, who premiered the role of Markéta, provides insights into her role, perspectives on the character, and how her collaboration with Saariaho helped to finalize Markéta's musical design. From the opera's early conception, Saariaho had expressed an interest in integrating elements of *kulning*, a traditional Scandinavian herding call, into the opera.[42] To find a performer capable of creating this sound, the creative team reached out to the folk music department of the Sibelius Academy, where Jää's name repeatedly came up. Jää herself is a specialist in kulning and Nordic folk traditions, and she elaborates on this vocal technique and her relationship with it in the interview:

> Jää: Herding calls were used to call the cows which were left to roam freely in the forests. Owners would call their herd with their own call and the cows would recognize it, but they are not used much these days… The voice-breaking technique I use comes from *Viena Karelian yoik*. This is what I use in the opera…I am a soprano with a high tessitura which certainly helps with the high-pitched herding calls.[43]

She was invited to audition and was subsequently given the role. It was during this audition that Saariaho heard Jää's *kulning* firsthand, and Jää recounts the experience in the following quote: "When I met up with her I demonstrated the folk singing techniques I used so that she was able to understand where my voice was positioned, how I used vowel sounds, and other things she needed to know about the technique and my voice, which she then used to compose Markéta's music."[44] Saariaho, attentive to the nuances of Jää's voice, integrated these details into the writing of Markéta's sound world. The result was a role that drew directly from Jää's practice. Moments of *kulning* appear throughout Markéta's music, most significantly in

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[42] Saariaho, *Innocence opera Symposium*

[43] Vilma Jää, "Q&A: Vilma Jää on Performing Markéta in Saariaho's 'Innocence' and her Dream of Reviving Finnish Folk Music Traditions," interviewed by Alan Nielson, *OperaWire*, August 1, 2021, https://operawire.com/q-a-vilma-jaa-on-performing-marketa-in-saariahos-innocence-her-dream-of-finnish-folk-music-traditions/

[44] Jää, "Q&A"

moments where she either reflects on her loneliness or mocks the perpetrator. In this way, the collaborative process between Jää and Saariaho allowed her to transform this traditional vocal technique into an emotional and narrative signifier in the opera.

Equally significant is Jää's interpretation of Markéta's character, which she elaborates on in the *OperaWire* interview:

> Jää: Markéta is a weird character because she is the only one who doesn't have to live with the trauma of the shooting. She was killed: three shots and she died immediately. All the characters in the opera are complex, with many sides to them, and Markéta is too. The way I pictured her in my mind was that she wasn't the worst bully, that she wanted to belong, she was a little odd in that she made up her own songs on her way to school, which is strange for an 18-year-old, so she is definitely a bit quirky. I think she felt a little bit of an outsider, but it was not how others necessarily saw her. She made songs about the other students, it was her way in, and she was embraced by the school community and the students. Lilly, who was the queen of the school, asked for a mocking song about this boy they called Frog Boy, and she said yes, and this is what precipitates the shooting.[45]

As we will see in the Case Studies, Markéta occupies a morally ambiguous identity between victim of the tragedy and bully of the perpetrator (referred to as "Frog Boy" in this quote). Jää's reading of Markéta seems to echo this sentiment, foreshadowing the tangled web of complicity in the opera. Furthermore, it builds on my previous suggestion that Markéta's *kulning* itself functions as both a timbral marker that distinguishes Markéta within the opera's sound world and an emotional double-sided weapon. The same vocal technique that she uses to bully the perpetrator in Act 4 Scene 13 (case study 3), is used to portray her sense of social isolation and desire to belong in Act 2, Scene 9.[46] However, here, Markéta's vocal distinction does not rely

[45] Jää, "Q&A"

[46] This scene presents a monologue from Markéta where she sings the following libretto. Passages where she sings in *kulning* are placed in square brackets: "…I left my parents arguing [as usual], and on the way to school [I sang] a song I had made up the night before. I stopped by the brook, and listened to its babble, and wondered how I would get along in college, how I would get along in college, how I would be able to leave my school that was like [a family] to me." Translation directly from score. Here, the *kulning* occurs on particularly suggestive text that imply her feelings of disconnect from her biological family, her identity as a singer, and her relationship with her high

on the audience recognizing kulning as a specific Nordic folk practice, but rather on its timbral divergence from the other characters' vocalities, which renders Markéta's delivery (when she engages this technique) as perceptibly "other" within the ensemble.

This exchange between Jää and Saariaho reveals how the two collaborated together in a creative dialogue to compose Markéta. Though Saariaho already had an interest in portraying folk singing in the opera, Jää's voice allowed her to realize this vision and set the technique to music and drama. When Jää later approached her role in performance, she did so through music that had already absorbed aspects of her own voice, allowing her to fully embody her character.

I turn now to Simon Stone, who directed the work. I draw on his interview recorded at the Aix-en-Provence premiere, which offers a director-centered approach to supplement the performer perspectives. In this interview, Stone reflects on his experience in understanding and shaping the dramaturgy of *Innocence*. Towards the beginning of the interview, Stone makes a remark that echoes the opera's survivor-centered focus: "*Innocence* is this very therapeutic opera about the need for honesty in the process of grief… It's about recovery much more than it is about trauma."[47] As discovered in Step 1, the creative team consistently emphasized throughout the writing process that the goal was not to re-enact or spotlight violence, but rather to grapple with the long emotional afterlife of survivors. Stone's statement reinforces these concerns.

What is most valuable for this analytical project, however, is Stone's recognition of Saariaho's musical world-building: "It's always the sound that feels right for the state that the characters are in. She's got this series of leitmotifs… When she writes for each character, the

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school friends who felt like a family to her. *Kulning*, then, can be understood as a marker of Markéta's interiority and, by extension, vulnerability.

[47] Simon Stone, interview by Festival d'Aix-en-Provence, "[INNOCENCE] ENTRETIEN AVEC LE METTEUR EN SCÈNE SIMON STONE," YouTube, February 21, 2021, https://www.youtube.com/watch?v=cTcepJr3Jms

music changes suddenly."[48] This is the first explicit acknowledgement, amongst primary sources, of the tool that will become central to my analytical approach. Though I will refrain from using the specific term "leitmotif," the idea of associative musical gestures, pitch collections, instrumentations, and rhythms that herald and signal a character's presence (whether literal or metaphorical) threads through the entirety of the opera. Transformations in these motifs act as psychological markers that reveal layers to the characters' understanding and processing of trauma, a detail that Stone understood in his work with the opera.

At several points in the interview, Stone remarks on Saariaho's bravery in her approach to the opera, noting that she is willing "to pursue an absolutely rigorous exploration of the psychological complexities of the storyline…And these social pieces are about different people who have different opinions to each other about the best way to move on."[49] These reflections align directly with Saariaho's original "Fresco" discussed in Step 1, where she imagined a conglomeration of voices and experiences, each fragmentary on its own, but combining to express deeply complicated inter- and intrapersonal relationships.

Furthermore, his reflections expand our understanding of the opera's direction from a non-creative team source. They confirm that the opera's score, staging, and narrative structure all arise from a strong desire to portray the complexity of survival. For this project, his comments are especially important because they validate the analytical emphasis on musical identity, motivic transformation, and the boundaries between individual and community. These ideas will be elaborated on in the 3 case studies in Steps 4 and 5.

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[48] Stone, "[INNOCENCE]."

[49] Stone, "[INNOCENCE]."

Another window into Saariaho's collaborative process appears in Joshua Barone's *New York Times* article on *Innocence*, which draws on interviews with conductor Susanna Mälkki and mezzo-soprano Magdalena Kožená (who performs the role of Tereza, Markéta's mother). While not as extensive as the "Q&A and Vilma Jää," the article nonetheless provides insight into how Saariaho adapted the opera's vocal writing to suit the specific actors performing each role and their associative language. Importantly, this source reiterates the importance of character-specific motifs, first mentioned in the above interviews with Simon Stone.

Though Saariaho had the help of her son Aleksi Barrière in translating and working with numerous languages, she was still attentive to the sonic details of each of the nine languages featured in the opera. This required her to work with languages that were new to her, but this unfamiliarity became an opportunity for collaboration. Similar to her approach towards Markéta, she teamed up with Czech mezzo-soprano Magdalena Kožená to help design the character of Tereza. Kožená recalls their time working together, noting that Saariaho met with her in Paris to record her speaking. Saariaho used these recordings and did a blind dictation, taking note of the sonic nuances and details of both Kožená's voice and the Czech language itself. To that degree, Saariaho stated "Analyzing the languages I don't speak was fascinating, but that's why it took so long to compose this piece."[50] This emphasizes how important linguistic engagement was to Saariaho when drafting the vocal parts for each character. Much in the same way as she did for Jää, Saariaho noted each actor's speech patterns and rhythms, shaping their vocal lines around their particular linguistic and personal expression.

[50] Kaija Saariaho, Magdalena Kožená and Susanna Mälkki, "A Reigning Opera Composer Writes of Trauma and 'Innocence,'" interviewed by Joshua Barone, *The New York Times*, July 2, 2021, https://susannamalkki.com/press/a-reigning-opera-composer-writes-of-trauma-and-innocence/

Kožená's reflections confirm this collaborative rigor. Despite the dense textures of the score, she found the vocal writing remarkably natural, stating that Saariaho "really understands voices," and "She lets you express yourself with colors and melodies that gives you space to really concentrate on the music and let it be in your body."[51] Kožená's verbiage here illuminates some of the sonic aspects that make *Innocence* so compelling. The vocal writing is both technically idiomatic to Saariaho and also emotionally intensive, in part due to the careful scoring derived from collaboration with the musicians.

The article also introduces Saariaho's collaboration with Susanna Mälkki, who also conducted Saariaho's first opera *L'amour de loin* when it premiered at the Met, and who was asked again to premiere *Innocence* at the Aix-en-Provence Festival. She notes that each character in *Innocence* has "their own musical signifiers," once again a reiteration of the presence of associative character motifs first found in Stone's interview.[52] While she observes that the musical material may, at first, feel complex, the character-specific motifs ultimately become the key to the opera's clarity. In speaking on these motifs, she says: "In the beginning, there's a lot to take in, but then that [the character motifs] is the element which makes it very understandable," further confirming that the musical identities I locate in the score are not theoretically abstracted constructions, but elements developed and understood collaboratively during creation and preparation.[53]

Additionally, Mälkki considers these musical identities within the thematic context of the opera. *Innocence*, she notes, "is not escapism. It's a work that actually helps us better understand

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[51] Saariaho, Kožená and Mälkki, "A Reigning Opera Composer Writes of Trauma and 'Innocence'."

[52] Saariaho, Kožená and Mälkki, "A Reigning Opera Composer Writes of Trauma and 'Innocence'."

[53] Saariaho, Kožená and Mälkki, "A Reigning Opera Composer Writes of Trauma and 'Innocence'."

the world that we live in… bringing all these different destinies together and showing how we have to live together in reconciliation. And that coexistence is there in the music."[54] Her comments draw a line between collaboration, character construction, and the opera's broader themes. These musical signifiers, to her, mirror the coexistence of trauma narratives that the opera seeks to reconcile.

All together, these perspectives reveal the collaboration between Saariaho's imagination and the voices and languages of the actors. This results in a rich musical world full of character motifs that contribute to the psychological impact of the work. Through personal collaboration, Saariaho allowed performers to reshape the musical world from within. Thus, the preceding three steps set the foundation for the analytical work to come and emphasizes the relevance of my analytical approach.

Step 3 – "Historical Context":

In Step 1, the creative team voiced their concerns about how media news outlets present acts of mass violence, specifically their tendency to spotlight perpetrators while neglecting the survivors. Oksanen, speaking of true crime, stated: "I think there's a problem with focusing so much on the perpetrators of crimes; the serial killer genre is very popular in every area of culture. For those who don't care for the genre, I can assure you that it will end before long--it's just a trend of the moment…But it's clear that since news coverage and this very emotional, very true crime-oriented trend is so focused on the perpetrators of crime, it was obvious to us that we didn't want [the shooter] on stage."[55] Considering these critiques, Step 3 aims to investigate this

[54] Saariaho, Kožená and Mälkki, "A Reigning Opera Composer Writes of Trauma and 'Innocence'."

[55] Oksanen, "Innocence Opera Symposium" In the 2021 premiere of *Innocence* at the Aix-en-Provence Festival in Provence, France, director Simon Stone did elect to physically depict the shooter on stage in the scenes where they

journalistic environment. To do this, I sample international news coverage of gun-related violence in the mid-2010s to attempt to understand how the opera engages with journalistic discourses, focusing on two instances of gun-related violence: the 2015 Charlie Hebdo attacks, referenced vaguely by Oksanen as "the terrorist attacks on Paris" in Step 1,[56] and the 2012 Sandy Hook school shooting. Though this latter incident is not explicitly referenced by the creative team, the tragedy was so widely publicized that it became representative of contemporary debates around gun violence. Additionally, I review a sample of news articles from both Europe (primarily France, reflecting the creative team's base in Paris) and the United States (given both the relevance of Sandy Hook and the prominence of gun violence in U.S. discourse) that represent a wide array of journalistic approaches. Importantly, my objective is not to match the incident depicted in *Innocence* to any specific real-world event. Rather, I aim to understand how media coverage of these incidents may have shaped the team's dramaturgical choices. Similarly, I do not intend on conducting a comparative analysis of European and American reporting, but rather I aim to assess the general tendencies of media coverage.

On January 7, 2015, two armed gunmen attacked the offices of French magazine *Charlie Hebdo* in Paris, killing twelve people and injuring eleven.[57] The attack followed the magazine's controversial depictions of the Prophet Muhammad and was subsequently categorized as both an act of religious terrorism and an assault on free speech. The violence provoked massive

depict his bullying. This went directly against the wishes of the creative team, who wrote in the notes of the score that the shooter should never be shown on stage. In the *Innocence Symposium*, when Saariaho revealed this fact to Oksanen (who could not physically be at the premiere), she simply responded with "Yuck…"

[56] Oksanen, "Innocence Opera Symposium."

[57] The victims were: Stéphane Charbonnier (47), Jean Cabut (76), Bernard Verlhac (57), Georges Wolinski (80), Philippe Honoré (73), Elsa Cayat (54), Bernard Maris (68), Mustapha Ourrad (60), Frédéric Boisseau (42), Franck Brinsolaro (49), Ahmed Merabet (42), and Michel Renaud (69).

demonstrations across France and around the world, with the slogan "je suis Charlie" becoming an international hashtag in defense of free speech.

In my investigation, I feature three articles and one retrospective written on the 10-year anniversary of the attack. These sources are: "'Charlie Hebdo' visé par une attaque terroriste, deuil national décrété" ("'Charlie Hebdo' targeted by a terrorist attack, national mourning declared") by *Le Monde* (Jan 7, 2015), "Attentat à Charlie Hebdo: la République doit cesser d'être faible face au terrorisme islamique" (Attack at Charlie Hebdo: The State should stop being weak in the face of Islamic terrorism) by *Le Figaro* (Jan 7, 2015), "Charlie Hebdo attackers: born, raised, and radicalized in Paris" by *The Guardian* (Jan 12, 2015), and "France marks 10 years since deadly Hebdo attack" by *Associated Press* (Jan 7, 2025).

In all four reports, there is a consistent emphasis on the attackers, whether it regards their identities, personal histories, or ideological motivations. *The Guardian* provides an example of this, constructing what is essentially a biography of the attackers. Quotes such as "The group of Parisian friends were all in their early 20s; many had met at a local middle school, most had poor school records and chaotic family lives,"[58] illustrate how the reporting frames the attackers as victims of marginalization and social outcasting. While this provides valuable sociological context, it disproportionately focuses on perpetrators as opposed to victims and survivors.

The other outlets display similar tendencies. *Le Monde* offers a more straightforward, yet still perpetrator-centered account. The article details the attackers' movements and actions in the immediate hours following the attack, providing a step-by-step account of the shootings.[59] *Le*

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[58] Angelique Chrisafis, "Charlie Hebdo Attackers: Born, Raised, and Radicalised in Paris," *The Guardian*, January 12, 2015, https://www.theguardian.com/world/2015/jan/12/-sp-charlie-hebdo-attackers-kids-france-radicalised-paris

[59] Le Monde, "'Charlie Hebdo' visé par une attaque terroriste, deuil national décrété," *Le Monde*, January 7, 2015, https://www.lemonde.fr/societe/article/2015/01/07/attaque-au-siege-de-charlie-hebdo_4550630_3224.html

Figaro, however, frames the attack as a national security failure, highlighting radicalization and political response over human loss.[60] Even the *Associated Press* retrospective, published ten years later, revisits these biographical details and highlights the current Paris mayor's sorrow, once again emphasizing the public interest in spectacle over survivor's experiences.[61]

When victims are mentioned, their presence is brief or generalized. *The Guardian* makes no reference to the victims at all. *Le Monde* notes the names of the journalists and cartoonists killed but features little on them beyond their professional roles. Similarly, the *Associated Press* ten-year retrospective gestures towards the grief of families and colleagues but again overshadows these experiences with the political implications of the attack. *Le Figaro* offers a significant tonal whiplash in their reporting, where a passage lamenting human loss is followed almost immediately by a critique on humanism and a call for a stronger state:

> "Massacre at Charlie Hebdo. Murderous craze. Twelve dead so far and several injured in serious condition. Indignation. Compassion. Shock. Investigation. Political solidarity. The President of the Republic's presence. Multiple tweets of support.[62]
>
> …
>
> Today, and after 2012, the authority of the state is undermined…The good intentions and determination of the Minister of the Interior are undeniable, but humanism is condemned if it is not based on a philosophy of penalty and a practice of power that makes it possible, effective, respected[.] Now, we need it the most, justice in the broad sense, a vigorous, coherent arm, obsessed with social defense, we have at most a crutch. We resist with words and they have weapons and the certainty of impunity!"[63]

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[60] Phillipe Bilger, "Attentat à Charlie Hebdo: la République doit cesser d'être faible face au terrorisme islamique," *Le Figaro*, January 7, 2015

[61] Thomas Adamson, "France Marks 10 Years Since Deadly Hebdo Attack," *Associated Press*, January 7, 2025, https://apnews.com/article/93a34fb461c793e6a189d2306cba7b6a?

[62] Original French: "Massacre à Charlie Hebdo. Folie meurtrière. Douze morts pour l'instant et plusieurs blessés don't l'état est infiniment grave. Indignation. Compassion. Stupéfaction. Enquête. Solidarité politique. Présence sur les lieux du president de la République. Multiples tweets de soutien." (*Le Figaro*, Jan 12, 2015), translated by author

[63] Original French: "Aujourd'hui, et depuis 2012, l'autorité de l'Etat est mise à mal… La bonne volonté et la determination du minister de l'Intérieur sont indéniables mais l'humanisme est condamné s'il ne s'appuie pas sur une philosophie pénale et une pratique de pouvoir qui le rendront plausible, opératoire, respecté? A l'heure actuelle, alors que nous aurions besoin, pour la justice au sense large, d'un bras vigoreux, coherent, obsédé par la souvegarde

These excerpts demonstrate how quickly the discourse dissolved into a larger political narrative. My intention here is not to critique this style of reporting (though the creators themselves were likely critiquing this approach), but to understand it as a model of storytelling that *Innocence* sought to resist. In this context, the creative team's insistence on centering victims and communities can be understood as a direct rejection of these journalistic conventions.

In contrast, coverage of the Sandy Hook Elementary School shooting in Newtown, Connecticut, took a significantly different tone. On December 14, 2012, a 20-year-old perpetrator, armed with an assault rifle, fatally shot twenty first-grade students and six educators before taking his own life.[64] The shocking nature of violence against young children prompted international public reaction. This resulted in journalism that leaned more sympathetic, emphasizing the lives of victims and the mourning of their families and communities. At the same time, however, the press (especially social media commentary) devoted significant attention to the perpetrator, his mental health, and speculative accounts of his motives. For this section, I will look at the following reports: "Children return to school in grief-stricken US town" by *France 24* (Dec 18, 2012), "Authorities ID gunman who killed 27 in elementary school massacre" by *NBC News* (Dec 14, 2012), "How Tragic Events Unfolded at Sandy Hook Elementary in Connecticut" by *PBS News* (Dec 14, 2012), and "Après Newtown, le role des

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sociale, nous dispons tout au plus d'une béquille. Nous résistons avec des mote et ils ont des armes at la certitude de leur impunité!" (*Le Figaro*, Jan 12, 2015), translated by author

[64] The victims were: Charlotte Bacon (6), Daniel Barden (7), Olivia Engel (6), Josephine Gay (7), Ana Grace Márquez-Greene (6), Dylan Hockley (6), Madeleine Hsu (6), Catherine Hubbard (6), Chase Kowalski (7), Jesse Lewis (6), James Mattioli (6), Grace McDonnell (7), Emilie Parker (6), Jack Pinto (6), Noah Pozner (6), Caroline Previdi (6), Jessica Rekos (6), Avielle Richman (6), Benjamin Wheeler (6), Allison Wyatt (6), Rachel D'Avino (29), Dawn Hochsprung (47), Anne Marie Murphy (52), Lauren Rousseau (30), Mary Sherlach (56), and Victoria Leigh Soto (27).

réseaux sociaux et des journalists en question" ("After Newtown, the role of social media and journalists in questioning") by *Le Monde* (Dec 18, 2012).

Unlike much of the Charlie Hebdo coverage, reporting on Sandy Hook mentioned the victims much more frequently. *France 24*'s coverage described the collective mourning as surviving students returned to classrooms under heavy security: "With security stepped up and families still on edge in Newtown, local schools are opening for the first time since last week's massacre, bringing a return of familiar routines—at least, for some—to a grief-stricken town as it buries 20 of its children."[65] *PBS News* reconstructed the events of the day, naming the children and educators who were killed and emphasizing the bravery of survivors.[66] *NBC News*, which led with the shooter's identity, dedicated most of its space to brief interviews with friends and family of the shooter.[67] *Le Monde*'s article, while primarily concerned with misinformation on social media, highlighted how reckless speculation risked destroying innocent lives by wrongly identifying the shooter's brother as the culprit.[68]

However, that isn't to say that the reporters were not morbidly fascinated with the personal details of the assailant as well. *NBC News* quickly identified him, cataloging details of his age, family background, and the weaponry used. *PBS News* followed a similar approach in its

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[65] "Children return to school in grief-stricken US town," *France 24*, December 18, 2012, https://www.france24.com/en/20121218-children-school-newtown-massacre-funerals-usa-crime

[66] PBS NewsHour, "How Tragic Events Unfolded at Sandy Hook in Connecticut," *PBS NewsHour*, December 14, 2012, https://www.pbs.org/newshour/show/how-tragic-events-unfolded-at-sandy-hook-in-connecticut

[67] Llanos, Miguel, "Authorities ID gunman who killed 27 in elementary school massacre," *NBC News*, Dec 14, 2012, https://www.nbcnews.com/news/us-news/authorities-id-gunman-who-killed-27-elementary-school-massacre-flna1c7616073

[68] Szadkowsksi, Michaël, "Après Newtown, le role des réseaux sociaux et des journalists en question," *Le Monde*, Dec 18, 2012, https://www.lemonde.fr/le-monde/article/2012/12/18/apres-newtown-le-role-des-reseaux-sociaux-et-des-journalistes-en-question_5989953_4586753.html Fascinatingly enough, *Innocence* reverses this misunderstanding. In the opera, the shooter's brother is completely absolved of any involvement in the crime, when he did, in fact, help the shooter organize the crime.

timeline of the shooting, tracing the killer's movements inside the school. *Le Monde*'s article detailed how social media users assumed the role of "detectives," amplifying rumors and misinformation about the shooter's identity, and falsely accusing the shooter's brother who had no role in the incident. *France 24*, however, managed to avoid any mention of the culprit, instead highlighting community response and spotlighting the memorial services held for the children. This is a strikingly more empathetic approach to journalism compared to the other accounts, especially those regarding Charlie Hebdo. Though I don't claim that the creative team read this specific *France 24* article, its model of empathetic reporting would likely have been embraced by the creative team.

The patterns identified in the reports on both crimes represent styles of journalism that manage to somehow be both cold and detached as well as sympathetic and mournful. In the case of Charlie Hebdo, victims were overshadowed by political narratives and the biographies of the perpetrators. In the case of Sandy Hook, reporters juxtaposed empathy for grieving families along with an interest in the perpetrator's life and motives. However, in both contexts, news media repeatedly returned to the attacker, shaping public memory of those tragedies around those responsible rather than those harmed.

Innocence rejects these popular journalistic norms by refusing to over emphasize the role and importance of the attacker. Instead, the creative team asks audience members to reconsider how violence is remembered and narrated. Step three of my method, then, demonstrated the effectiveness of tracing surrounding discourses for understanding artistic decisions. Step four will apply this understanding to musical analysis.

Step 4 – Music Analysis, Introduction:

Step 4 now focuses on musical analysis, using the insights gained in Steps 1-3 to guide my investigation. These earlier steps illuminated several themes, including: the tension between individual and collective experience, the enduring grief suffered by survivors and their communities, and how multiplicities of truth can exist at once, often discordantly. These concerns form the structural principles that shape the opera's dramaturgy. They also provide my framework for analysis, leaning on motivic transformations to understand how Saariaho's music engages in dialogue with these themes.

Before turning to close analysis, it is important to clarify the scope of this step. My analysis focuses on the characters within the "realm of memories": Markéta, Lilly, Iris, Anton, Jerónimo, Alexia, and Cecilia. While figures in the present-day wedding scene, including families of survivors and relatives of the perpetrator, also contribute to the opera's story, it is the memory-realm characters who represent the collaborators' central concerns most clearly. Their characters present the long-term aftereffects of violence, and they each represent a "truth" of the story that ultimately combine into a fragmented understanding of the tragedy of that day. Accordingly, the three case studies that follow are drawn from these memory-scenes and focus on characters that experienced the shooting.

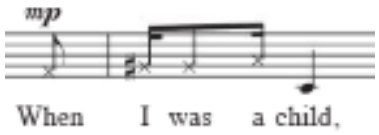
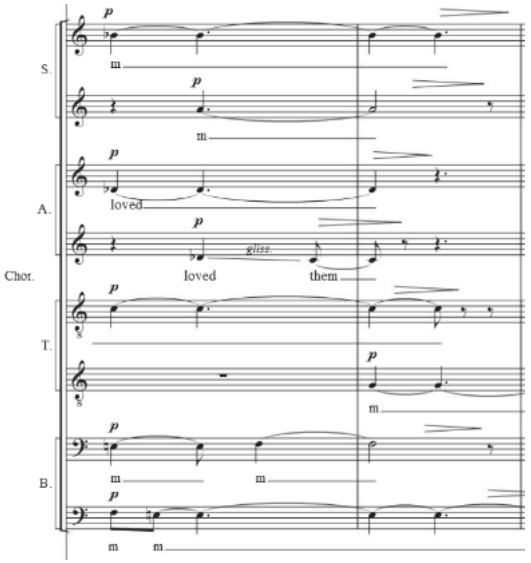
With this scope defined, Step 4 seeks to uncover how *Innocence* musically constructs experiences of trauma and survival, guilt and innocence, as well as communion and division. Three guiding questions, derived from the previous analyses, guide my inquiry: How does Saariaho musically define the boundaries between the individual and the communal? How are associative musical elements (motives, textures, timbres) assigned to and transformed across

characters to depict memory and trauma? How does the music solicit empathy for victims and survivors?

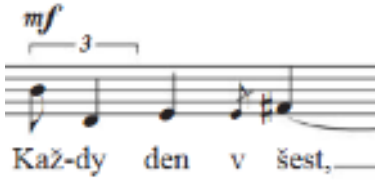
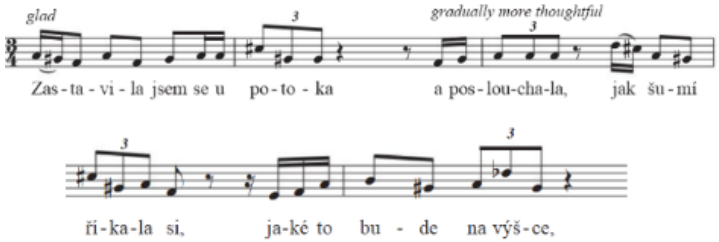
Before beginning the case studies, I have compiled a detailed table below in Ex. 1 that catalogues each memory-character's musical and linguistic features. This includes: their native language, style of line delivery, and recurring associative gestures. This table was constructed through a close examination of each scene in the realm of memories where I tracked the musical materials that accompanied each character. Over the course of the opera, there were striking consistencies between certain characters and certain musical elements. Cataloging these features in a table allows for an easy way to track the presence and transformations of each character's associative sound world. Furthermore, it allows us to begin to address the guiding questions outlined above.

I now will quickly demonstrate how Saariaho's motivic treatment functions in practice by closely examining instances of how Markéta's and Lilly's musical identities are manifested. Of all the student characters, Markéta stands apart for her specific musical identity. She is portrayed as a pianist and songwriter, and Saariaho translated this personal detail into her music through pitch-specific melodies. Whereas other students are often characterized through rhythmic or timbral motifs, Markéta is defined by the scalar palettes that recur and transform across the opera. In Act 2, Scene 8, during a one-sided conversation with her mother Tereza, her vocal line begins with [G#, A, B, C#/Db, D, E, F] forming sc(0134689), a major scale with a flattened sixth. This scalar association remains with her throughout the opera until the climactic flashback scene of Act 4, Scene 19 (Case Study 3), where her musical identity will fracture through the act of recollection. Despite that, this scalar association gives Markéta a consistent musical marker that reflects her narrative role as a musician.

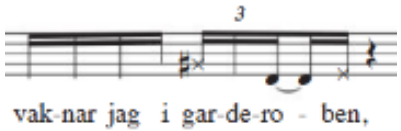
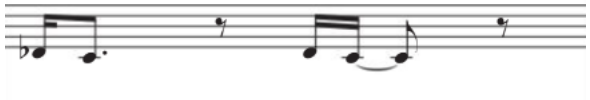
Characters, Musical Motifs, and Languages in *Innocence*

Character	**Native Language**	**Style of Line Delivery**	**Musical Motifs**
Cecilia (Teacher)	English	*Sprechstimme*  	• 5/8 meter • 8-part Choral SATB accompaniment, usually phonemes or singular words from Cecilia's text, usually static or moving by small intervals  • m2 clusters in percussion • Two eighth note timpani pulses every measure

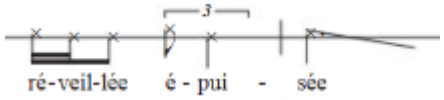
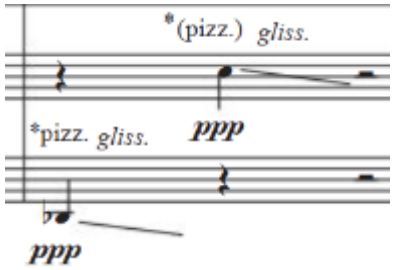
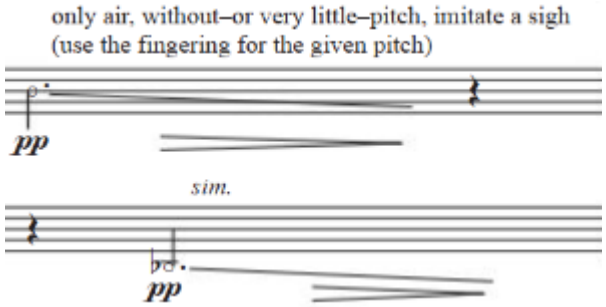
Characters, Musical Motifs, and Languages in *Innocence* (continued)

Character	Native Language	Style of Line Delivery	Musical Motifs
Markéta	Czech/ Finnish	Pitched singing with rhythms on staff 	• Melodic pitches derived from Finno-Ugric *Kulning*, sc(0134689)  • 3/4, with occasional 7/8 meter • Vocal cadenzas/improvisation

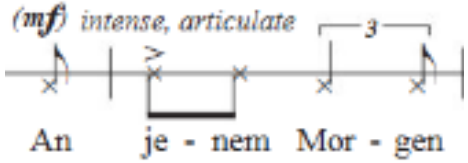
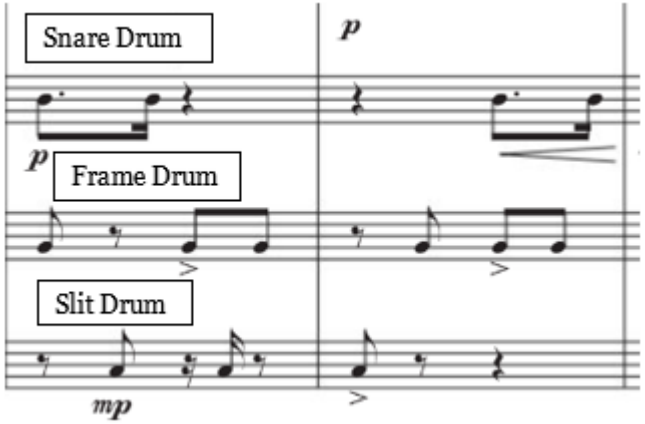
Characters, Musical Motifs, and Languages in *Innocence* (continued)

Character	Native Language	Style of Line Delivery	Musical Motifs
Lilly	Swedish	Slightly pitched, loosely rhythmized speech, on staff 	• Instrumentation of: Piano, Harp, and Celesta, often organized in sextuplets. Celesta spells out sc(012458), piano and harp spell sc(013469) • "Heartbeat" rhythmic motif (sixteenth + dotted eighth + eighth rest + 2 sixteenths), 

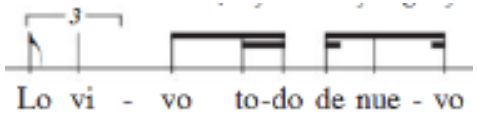
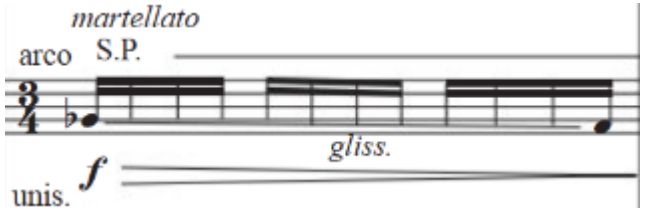
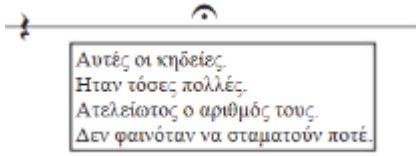
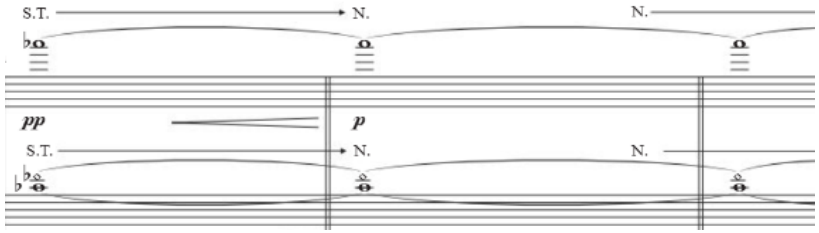
Characters, Musical Motifs, and Languages in *Innocence* (continued)

Character	Native Language	Style of Line Delivery	Musical Motifs
Iris	French	Loosely pitched, rhythmized, "sighing," no staff notation 	• "Sighing" instrumentals—downwards pitch bends  • Blowing air through woodwinds w/o pitch 

Characters, Musical Motifs, and Languages in *Innocence* (continued)

Character	Native Language	Style of Line Delivery	Musical Motifs
Anton	German	Loosely pitched, precisely rhythmic speech, no staff notation 	• 2/4 meter, eighth note pulses in percussion with accent on beat 2 • Tremolos in alto flute • Dotted eighth + sixteenth in snare drum, which is then offset an eighth note in the slit drum 

Characters, Musical Motifs, and Languages in *Innocence* (continued)

Character	Native Language	Style of Line Delivery	Musical Motifs
Jerónimo	Spanish	Pitchless, rhythmically quick speech, no staff notation 	• 16th notes on guiro, either syncopated or pulsing • Steady 16ths on woodblocks/xylophones • Downwards tremolo glissandos spanning ic1 or ic2 
Alexia	Greek	Pitchless, rhythmless speech 	• "Senza tempo, colle voce" recitative, • Timbral motive in the strings move from *sul ponticello* towards normal sound and back 

Ex. 1: Table with characters from the realm of memories, their line delivery style, and musical motifs associated with their characters

Lilly, by contrast, presents a more subtle expression of her character. She is not framed within the story as particularly musical, yet Saariaho assigns her a strikingly pitch-specific melodic world in the celesta, harp, and piano (often arranged in sextuplets). The harp and piano parts generate sc(013469), an octatonic subset of Markéta's defining scale, while the celesta spells the much more chromatic sc(012458). This duality, partly unique, partly anchored in Markéta's world, creates a subtle connection between the two characters that is dramaturgically vital. In Act 4, Scene 19, it is revealed that Lilly would commission Markéta to write mocking songs about people, including the perpetrator of the crime. Markéta and Lilly, then, are bonded over their shared cruelty, and this is reflected in their subtle harmonic overlap. Furthermore, In Act 3, Scene 13 ("It"), Lilly recounts locking herself in a custodial closet during the incident, refusing to let anyone enter. "Not even you," she says, as stage directions indicate that she grab Markéta's hand.[69] While this results in Lilly's survival, she becomes burdened with survivor's guilt over Markéta's death. This guilt is embedded in her musical identity through the enmeshment of her own unique melodic world—sc(012458)—and a fragment of Markéta's, sc(013469).

No other pairing in the opera features this kind of motivic overlap, not even Lilly and her boyfriend, Jerónimo. Thus, this cannot be merely a technical choice or accidental coincidence, but a clear example of Saariaho's compositional approach to the opera's themes. It also provides clarity to some of the guiding questions I asked at the beginning of this step: How does the opera musically differentiate between communal and individual experience? How are associative musical elements distributed across characters to construct layers of memory and trauma? In

[69] The 2021 Aix-en-Provence Festival premiere did not stage this detail, though the directions are nonetheless written in the score.

Lilly's case, the music suggests that her identity is intertwined with her memory of Markéta, portraying in sound the complex world of survivors and survivors' guilt.

These examples demonstrate that Saariaho's character motifs operate not as ornamental devices or leitmotifs à la Wagner or John Williams (as Stone suggested in step 2), but as musical depictions of grief and memory. Each character is given a distinct palette, but those palettes bleed into one another, overlap, interrupt, fall apart, and combine at critical moments. In this way, the opera musically depicts one of the creative team's central concerns of how individual experiences can retain their uniqueness while also being woven into a communal narrative. The following three case studies build on this foundation, tracing in greater depth how music, language, and staging converge to represent these survivor-centered perspectives.

Step 4 – Music Analysis, Case Study 1, Act 1, Scene 3:

To discover how *Innocence* explores its themes, I examine three individual case studies from the opera. Each case study will combine two steps: Steps 4 and 5. Step 4 involves close musical analysis, identifying the compositional techniques Saariaho used and applying motivic analysis using the table from Ex. 1 above. Step 5 interprets these findings within the context of the three questions I designed in the previous section. This allows each case study to function as its own investigation while also coming together for a broader understanding of the entire opera.

The first case study, Act 1, Scene 3 ("The Aftermath"), illustrates these dynamics on a small scale. Though this moment is short, the interplay of musical motifs, instrumental colors, rhythmic gestures, and staging provides insight into Jerónimo's and Anton's private worlds and the shared experience that binds them. As such, it serves as an ideal starting point for demonstrating how *Innocence* musically portrays its themes.

In this scene, Jerónimo and Anton each reflect on their personal experiences before and after the tragedy. The staging emphasizes their individual separation: Jerónimo occupies the center of the restroom, while Anton resides in one of the stalls, with the door between them acting as a physical boundary. They do not interact or even acknowledge each other at any point. They exist within their own distinct, self-contained space, and their spoken lines unfold independently. The libretto in this section reads:

> Jerónimo: I live through all of it again each time I smell fresh paint, and my wife doesn't understand why I delay the renovation of our house. She thinks I am lazy and not a man at all.
>
> Anton: Ten years ago, I was chubbier than now, I wore glasses, and my hair was blonde. Now I wear contacts, and my hair is black, and no one recognizes me.
>
> Jerónimo: My girlfriend wanted a wedding in a church with an organ playing, and rice raining on the church steps. We got married last year, but not in a church, and I didn't tell my wife why. I couldn't bear the idea of standing at the altar with my back to the door or celebrating my wedding in a place that anyone could have entered.[70]

At first glance, the visual and textual isolation suggests that the characters' experiences are entirely separate. However, a close examination of the music reveals that their emotional worlds are intertwined through their overlapping and porous motifs. This musical interaction between the two conveys interconnection and shared trauma, demonstrating how Saariaho musically embeds the themes of individuality and communality even within moments of apparent individual isolation.

[70] Kaija Saariaho, *Innocence*, (Wise Musical Classical: 2021). Translation from score.



Ex. 2: Anton (left) and Jerónimo (center) reflect separately, but together, in the restroom.[71]

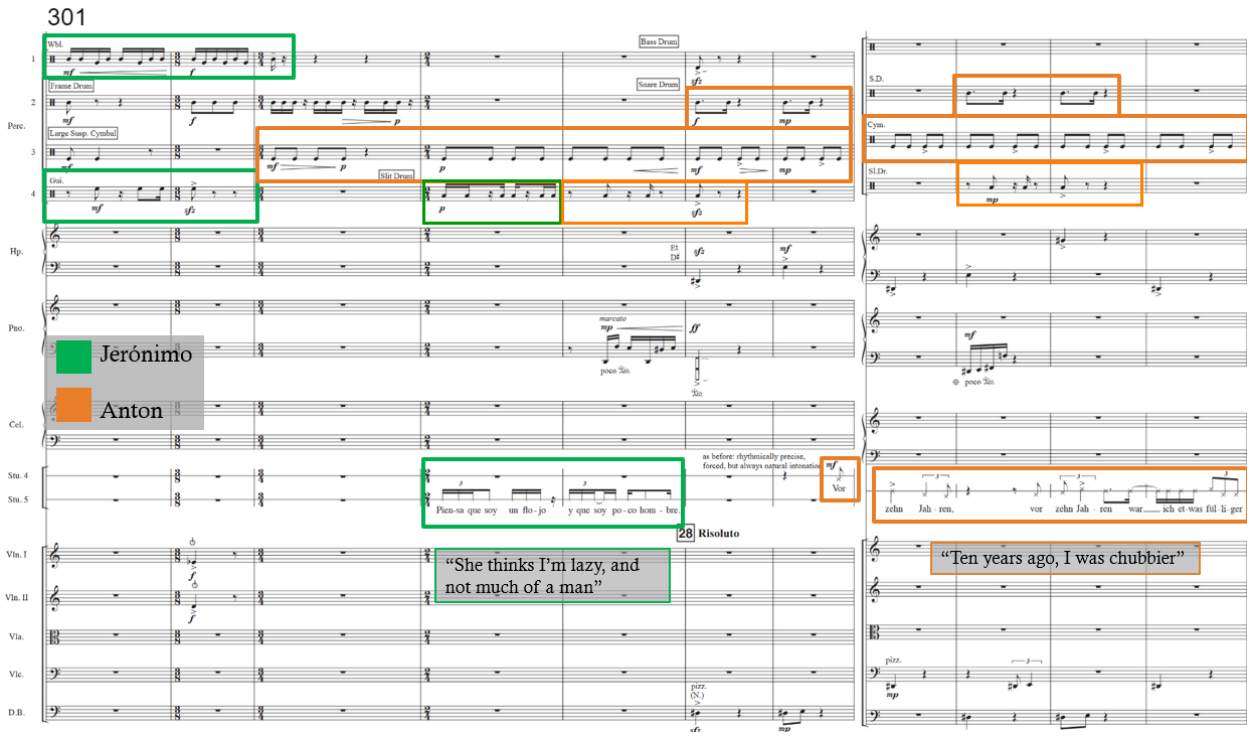
Measures 301-330 illustrate this nuanced interaction. The scene opens with Jerónimo delivering his first block of text through three sequential statements ("I live through all of it again…/and my wife doesn't understand why…/She thinks I'm lazy…"). For his first two lines, his associative musical elements (the syncopated guiro and woodblock) are foregrounded in a thin orchestral texture, heralding his presence.

However, before his third statement, Jerónimo's instrumental layer begins to recede. The guiro rhythm fragments, and Anton's large cymbal pulsations gradually surface in the orchestration. By the time Jerónimo begins his final line of text, Anton's motifs dominate his. This creates a motivic overlap between the characters.

When Anton begins his text, the focus shifts decisively to his own associative sound world. The snare drum performs dotted eighths and sixteenths while the slit drum performs the

[71] Kaija Saariaho, *Innocence*, conducted by Susanna Mälkki, directed by Simon Stone, Festival d'Aix-en-Provence, July 13, 2021, Aix-En-Provence, France, video, YouTube, https://www.youtube.com/watch?v=SZz2bxnAQfs

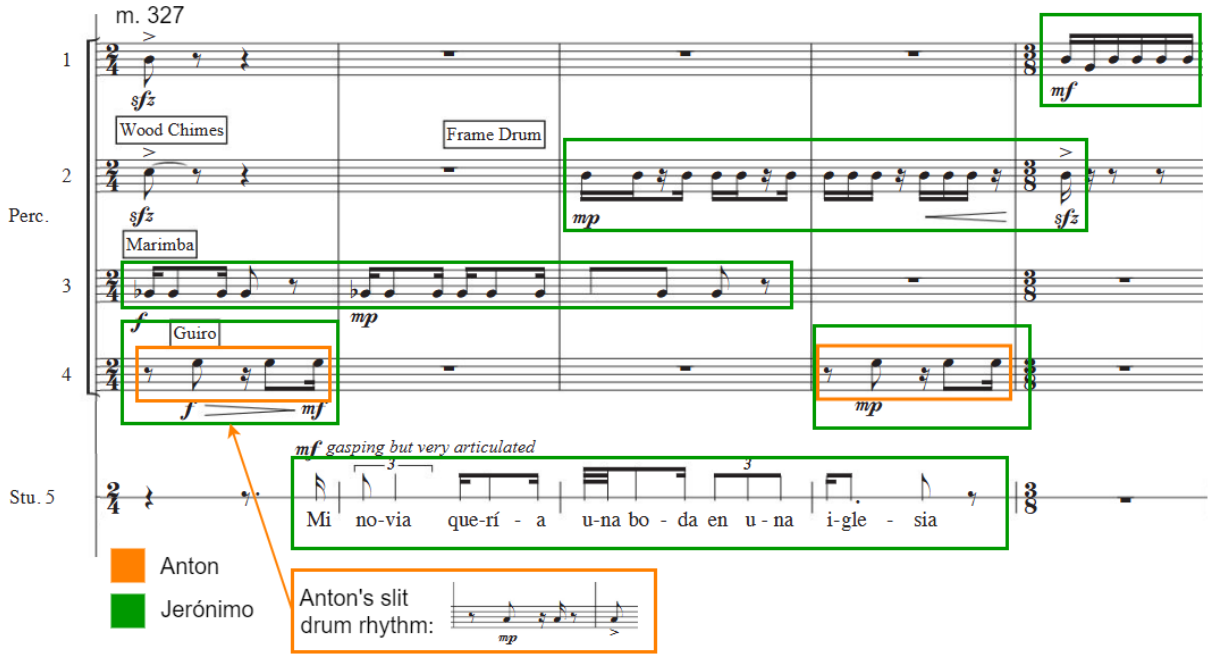
same rhythm offset by an eighth rest. The suspended cymbal provides eighth note pulses that accent beat 2. The motives here parallels Anton's own unique stage presence. He often delivers his line with jagged rhythms, and is generally jumpy and easily startled. Thus, these jagged rhythms mirror Anton's anxiety.



Ex. 3: mm.301-311, with Jerónimo's and Anton's gestures color-coded as green and orange, respectively

Crucially, when Anton finishes speaking and Jerónimo reenters in measure 327, the guiro unexpectedly adopts the same rhythmic figure as the slit drum, though slightly altered. Anton's original rhythmic motivic cell goes as follows: eighth rest, eighth note, sixteenth rest, sixteenth note, eighth rest, eighth note. Here, Jerónimo's mutation of this cell appears like this: eighth rest, eighth note, sixteenth rest, eighth note, sixteenth note (demonstrated in Example 4). Previously, it performed either steady or syncopated sixteenth note pulses. Though slightly different, this change in rhythmic arrangement for the guiro is nonetheless striking and aurally calls back to

Anton's character. This imitation suggests that Anton's motifs invade into and through Jerónimo's sound world. Before Anton enters, his presence is heralded by his percussion. After he finishes, his presence lingers through his rhythmic motifs echoed in Jerónimo's instrumentation.



Ex. 4: mm. 327-31, showing how Jerónimo's guiro adopts Anton's slit drum rhythm

This echo of Anton's slit drum rhythm is only a partial example of how Saariaho manipulates these characters' associative gestures. Even when they are staged in a physically and visually disconnected way, the music connects them. Furthermore, this introduces the first instance of Jerónimo's motifs being porous and susceptible to intrusion from other characters. This will be further elaborated on in the subsequent case studies.

Step 5 - Interpretation, Case Study 1:

Step 5 pivots to interpretation. Here, the aim is to understand how the musical observations uncovered in Step 4 function within the thematic contexts identified in Steps 1-3.

To guide this process, I draw on the three questions I designed at the beginning of Step 4: How does Saariaho musically define the boundaries between the individual and communal? How are associative musical elements (motives, textures, timbres) assigned to and transformed across characters to depict memory and trauma? How does the music solicit empathy for victims and survivors? While each investigation focuses on individual case studies, together they will demonstrate the ways that Saariaho's compositional strategies depict individuality, collectivity, and survival within the musical space.

How does Saariaho musically define the boundaries between the individual and communal?

In Act 1 Scene 3, the creative team establishes a contrast between the visual isolation of these two characters and their sonic interactions. The staging places Jerónimo and Anton in separate parts of the restroom, with the stall door acting as a physical boundary between the two. It can be surmised from surrounding context in the opera that these spaces were where the two took shelter during the shooting. The literal boundaries here suggest that the individual experience is self-contained, which is only further supported by their spoken lines that do not acknowledge each other's presence. However, crucially, the score acts as a non-diegetic clue for the audience that suggests these physical walls are psychologically absent.

Additionally, the communal is not defined through harmonious interactions between these two characters' sound worlds, which might imply a balanced sense of togetherness. Instead, Saariaho defines the communal through their shared musical world, where there are no rules regarding balance or symmetry. Specifically, Anton's rhythmic cells influence Jerónimo's texture and invade his musical space by appearing while Jerónimo is still speaking. This suggests that the communal has the potential to be overbearing, overpowering, dominating, and uneven in portrayal--a point I further elaborate on in the following sections.

How are associative musical elements (motives, textures, timbres) assigned to and transformed across characters to depict memory and trauma?

The previous question addressed the issue of boundaries, but here, I address how breaches in those boundaries further depict how characters process their memory and trauma. The unidirectional influence of Anton's motifs on Jerónimo exemplifies this the most clearly. As shown in Step 4, after Anton delivers his last lines, Jerónimo's guiro begins to adapt and alter Anton's slit drum rhythmic cell.

While Anton's motifs intrude on Jerónimo's musical space, the reverse does not occur, creating an imbalance that reflects onto Jerónimo as a kind of vulnerability. His musical identity is more susceptible to intrusion or corrosion (a point further explored in subsequent case studies), while Anton's musical identity remains comparatively intact--even imposing. This asymmetrical exchange is a surprisingly nuanced depiction of trauma that suggests that trauma has the ability to erode some (but not all) victims' agency. Additionally, Jerónimo's lines discuss his inability to get married in a church or to enjoy a celebration with his back turned to a wall. This erosion of agency is enforced by both the dialogue and the intrusion of Anton's motifs. Anton, on the other hand, discusses how he changed his appearance entirely, dyeing his hair, wearing contacts, so on and so forth. Yet, crucially, Anton's motifs do not transform at all, unlike his attempts to transform his physical appearance. This reads as very purposeful. Anton can not change himself or his experience, no matter how he tries, meanwhile Jerónimo tries to move on from the tragedy, but finds that his ability to act freely is eroded by the memory of his trauma. Thus, Saariaho depicts trauma and memory as diverse, having the ability to both strip survivors of their free will and trap them within their memories.

How does the music solicit empathy for victims and survivors?

Finally, these musical details ultimately culminate in a specifically targeted approach towards soliciting empathy for these survivors. Unlike journalistic or sensationalist narratives that often seek to organize survivors' experiences into neatly delineated categories, *Innocence* insists that survivor experiences are complicated and thus cannot be cleanly understood. Specifically, the interactions between Jerónimo's and Anton's motifs place the listener into a position of witness. I further elaborate on this in Step 6, but even as early as here, the audience bears witness to the clashing of memories and experiences. Interestingly, the creative team does not insist that Anton is "bad" or "overbearing" despite his motivic dominance, nor do they insist that Jerónimo is pitiable due to his motivic porousness. In fact, it's quite the opposite. As will be observed in further case studies, Jerónimo is one of the more verbose and critical characters, willing to expose and name the performative and contradicting behaviors the public displays towards survivors. This characteristic stands in contrast to how easily influenceable his sonic world is, which in turn further nuances how the ways the survivors process trauma is not always logical with their personality.

Ultimately, this case study is a small moment in the opera, yet it demonstrates Saariaho's incredibly careful treatment of musically depicting how the characters remember the tragedy and process the events as their lives continue. These overlapping motives, then, are not simply textural variety, rather, they are the means by which the opera articulates its central thematic concerns. By allowing Anton's material to interrupt Jerónimo, Saariaho resists a clean separation of voices, instead insisting that trauma, memory, and survival exist in relation to both themselves and others.

Step 4 – Music Analysis, Case Study 2, Act 3, Scene 13

The previous scene offered a glimpse into how the opera presents two characters and their music together in a shared space. Act 3 Scene 13, also titled "The Aftermath," expands that lens considerably, across a wider cast of characters and a longer stretch of music. This scene takes place in the realm of memories, in the cafeteria of the international school where the tragedy took place. The realm of memory cast: Cecilia, Markéta, Lilly, Iris, Anton, Jerónimo, and Alexia, gathers to reflect on the national response. The libretto goes as follows:

> Alexia: After the initial shock subsided everyone became overactive. Everyone organized memorials and sang the favorite songs of those who had died, everyone put flowers at the memorial wall where we would leave teddy bears, and all together we were one big monument.
>
> Anton: Everyone felt the urge to do something. Something completely useless. Anything to make oneself feel better.
>
> Jerónimo: Half of the city attended the first ceremonies. Politicians flooded the place to light candles and score votes. Ministers dragged along journalists and swore to tighten gun legislation and forbade calling the deed terrorism and dispelled any speculations about racist and political motivations, because the deed was inexplicable. And people kept asking why.
>
> Alexia: Many promises, many speeches, nothing happened.
>
> Jerónimo: "Why," that's all they are ever interested in.
>
> Anton: Gradually, our crowd was divided into two groups. Those who had been there at that moment, and those who hadn't. The grief of some became more valuable, the grief of others worthless.
>
> Iris: After a year, the journalists grew weary.
>
> Anton: Everyone grew weary of the mourners.
>
> Lilly: We became unfortunate reminders…
>
> Jerónimo: …of the inexplicable…
>
> Markéta: …bloody deed! Bloody deed!

Alexia: People who would spoil the mood of a party.

Anton: People who had to learn to be quiet.

All: Until the next shooting. Until the next shooting. Until the next shooting.

Iris: And then we all went through it again

Jerónimo: and the trustworthy voice of the newscaster…

Anton: …became for us the voice of fear.

Markéta: The voice of terror.

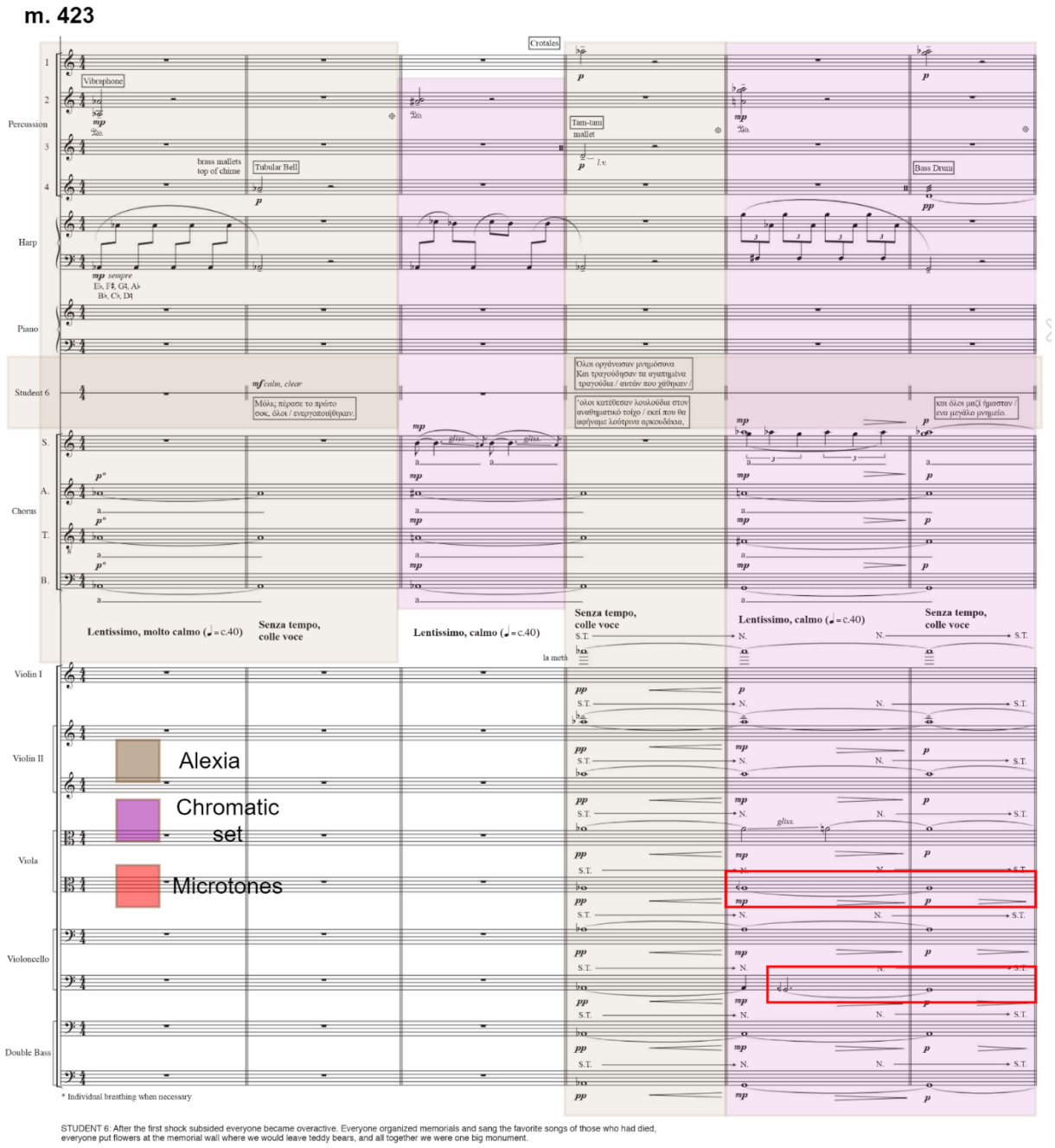
All: The voice of nightmares.[72]

Already at the textual level, the scene is filled with commentary on the themes outlined earlier: how grief is both shared and personal, how societies memorialize violence, how news is reported, and additionally, how cycles of forgetting make repetition inevitable. The task of this analysis, then, is to trace how Saariaho's score amplifies these textual statements through musical means. Through this case study, we will find that character motifs take on numerous complexities that build on our findings in Case Study 1. Some retain clear, confined boundaries between themselves and the group, while others become destabilized, foreshadowed, or echoed in the voices of others. We will also find that the character motifs can become so entangled that they become homogeneous, with everyone experiencing a shared, uniform experience.

The section begins in measure 423 with Alexia. As is typical for her, the orchestra accompanies her *senza tempo, colla voce*. The chorus and harp herald her presence with the pitch class Ab, which leads directly into her text. Between her lines, the chromatic set [F#, G, Ab, A, Bb, Cb], sc(012345), fills out the texture. At measure 427, Viola 2 and Cello 2 play an A quarter-

[72] Kaija Saariaho, Innocence, (Wise Musical Classical: 2021). Translation from score.

flat, which, together with the chromatic sc(012345), sustains into her final block of libretto. This back-and-forth between voice and ensemble is demonstrated in Example 5.



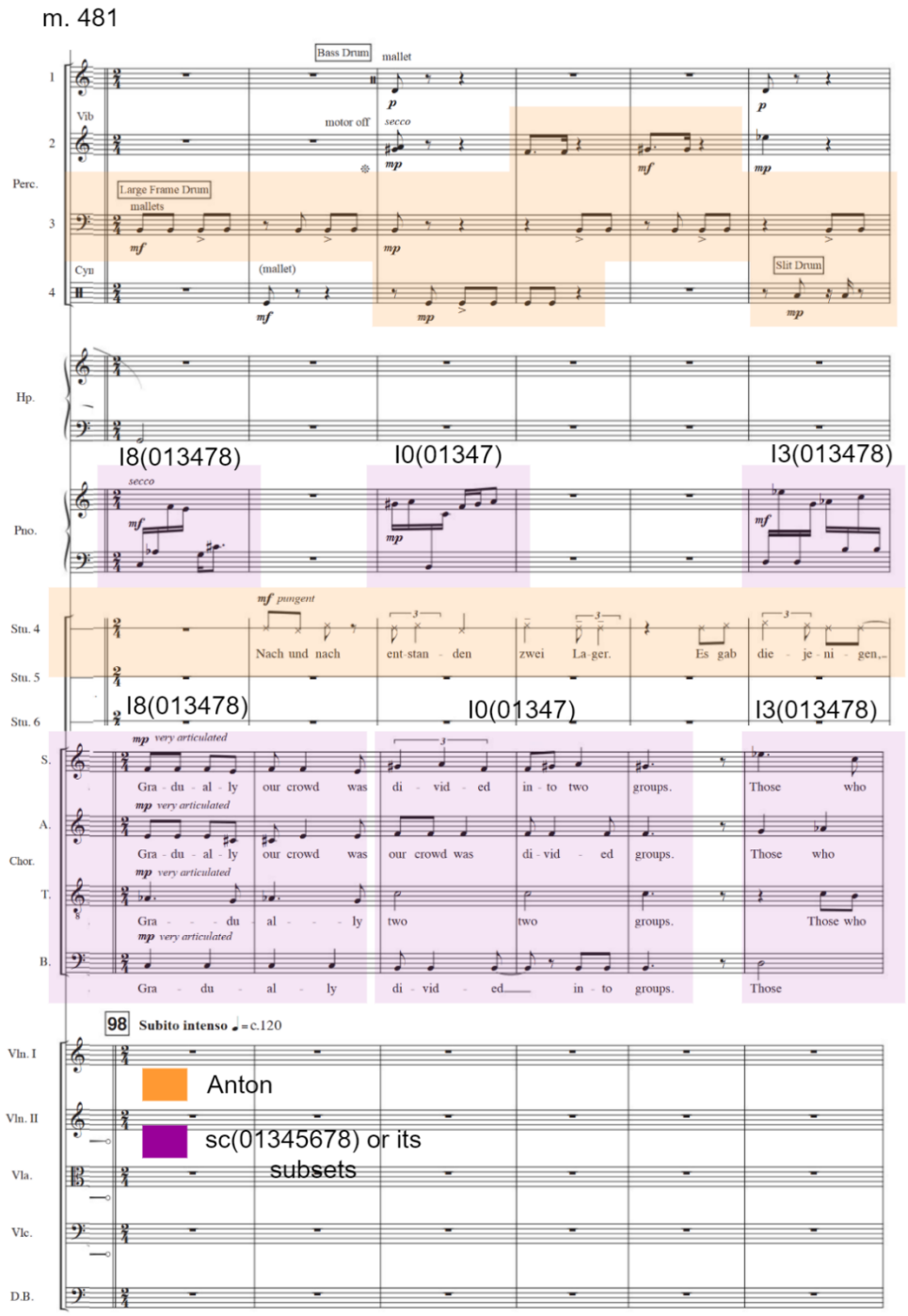
Ex. 5: mm. 423-8, the beginning of Act 3, Scene 13, showcasing Alexia's back-and-forth between her characteristic pitch class Ab, and the chromatic set sc(012345), along with the introduction of microtones.

Anton arrives in measure 430 with his usual musical markers, including the syncopated snare rhythm and steady eighth-note pulses in the choir that accent beat two. A brief overlap occurs in measure 462, where Jerónimo begins to speak a beat before the orchestra realigns to accompany him. His entrance momentarily intersects with Anton's gestures, recalling their earlier interaction in Act 1, Scene 3. For the next seventeen measures, the orchestra accompanies Jerónimo, alternating between his characteristic guiro rhythms and tremolo half step glissandi in the low strings.

This is interrupted when Alexia cuts in at measure 479. The texture shifts abruptly back to her *colla voce* style, grounded once again by her signature Ab. Although Jerónimo continues to speak briefly into the next measure, the orchestra does not follow him.

Anton's re-entry at measure 481 restores alignment between character and accompaniment, but now with a transformation in the chorus's role. Instead of punctuating the characters' text with isolated syllables and phonemes, the SATB choir echoes Anton's entire dialogue, translated into English: "Gradually, our crowd was divided into two groups…" Their staggered entrances across voice parts creates an echo effect, turning Anton's words into a kind of collective chant. Harmonically, the chorus and piano share the same pitch content, articulated in short bursts that project sc(01345678) and its subsets.

At measure 504, Iris steps in. Breath tones in the winds and wide plucked glissandi maintain her signature musical environment, while the chorus continues echoing her text in English. However, the first violin sustains a high harmonic that moves between *sul ponticello* and normal bowing, a gesture usually reserved for Alexia. This overlap, however, only lasts for a moment. After two measures, Cecilia interrupts with her 5/8 meter and pulsing timpani.



Ex. 6: mm. 481-6, showing how Anton's rhythmic motifs align with the harmonic backdrop of sc(01345678) and its subsets.

Anton enters at measure 508 to complete Cecilia's line, but here, Saariaho subverts expectation by omitting his usual rhythmic ornamentation. Instead, the marimba sustains

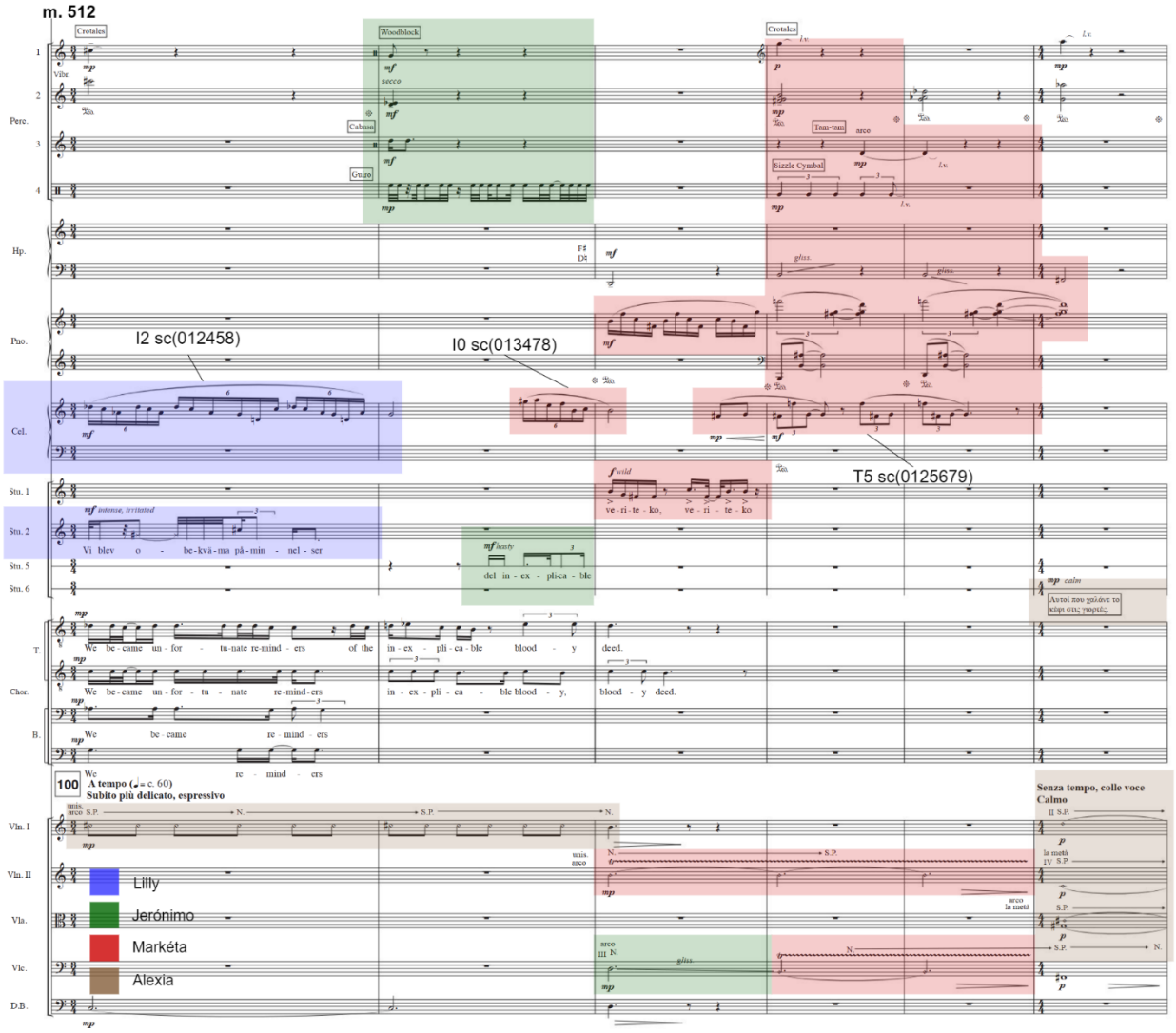
Cecilia's minor second clusters in rapid sixteenth notes. This leads to a sweeping flourish of sixteenth notes. Against Anton's line, "Everyone grew weary of the mourners," the orchestral outburst mirrors the turbulence of the text.

After the disturbance at rehearsal 100 (m. 512), Lilly enters with the Celesta sextuplets and her associative sc(012458), [F#, A, Bb, C, Db, D]. Jerónimo follows with his guiro and cabasa, but before he finishes, Markéta interrupts, shouting "bloody deed! bloody deed!" The orchestra accompanies Markéta during and after her text with the pitch collection [F, F#, G, A# B, C, D], sc(0125679), a set directly linked to her in Act 4. The music then returns to Alexia's *senza tempo, colla voce* style, with the pitch Ab emphasized. These constant interruptions and overlaps of character gestures create a flurry of aural identities that struggle for dominance. This process is shown in the example below.

This scene reaches its climax at measure 530. Up to this point, the students and their teacher have expressed being remembered, forgotten, and misunderstood. However, here, in an especially grave moment, all characters state the phrase "Until the next shooting" three times in staggered entrances, each in their native language and accompanied by their signature musical gestures. The result is an overwhelmingly dense musical collage (or perhaps, a "Fresco"), where identities, memories, languages, and motives converge into a single moment.

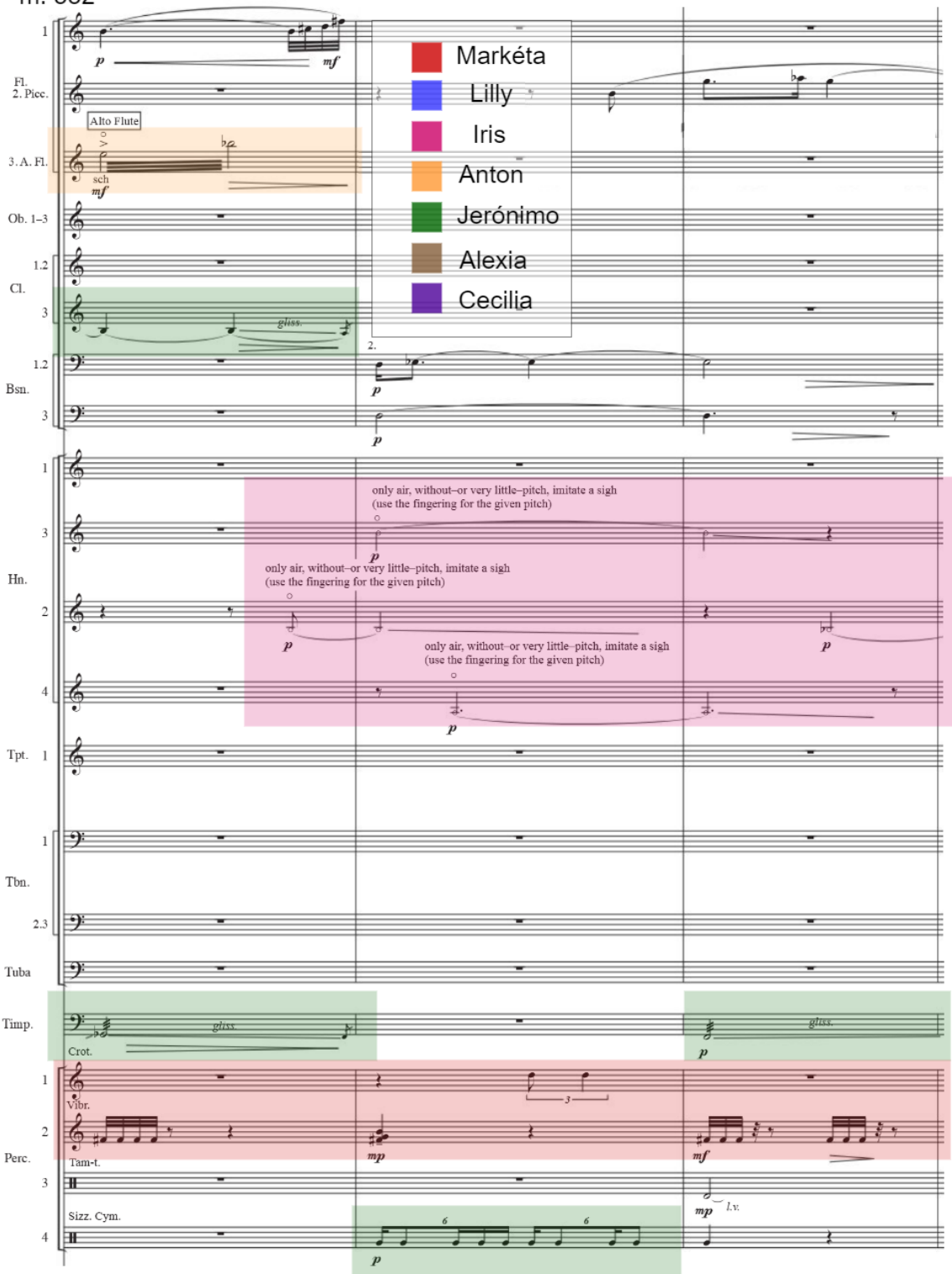
Example 8 shows this layering of motives, beginning at mm. 532-33. The following musical gestures are present: Anton's tremolo alto flute and beat 2 accents (using [B, D, Eb, Gb,]) Jerónimo's syncopated guiro and half-step glissandi, Markéta's vibraphone timbre and pitch group [F#, G, A, B], Lilly's celesta sextuplets outlining [Gb, A, Bb, C, Db, D], Iris's wide glissandi and breath-tones, Alexia's signature *sul ponticello*-to-ordinary bowing on sustained

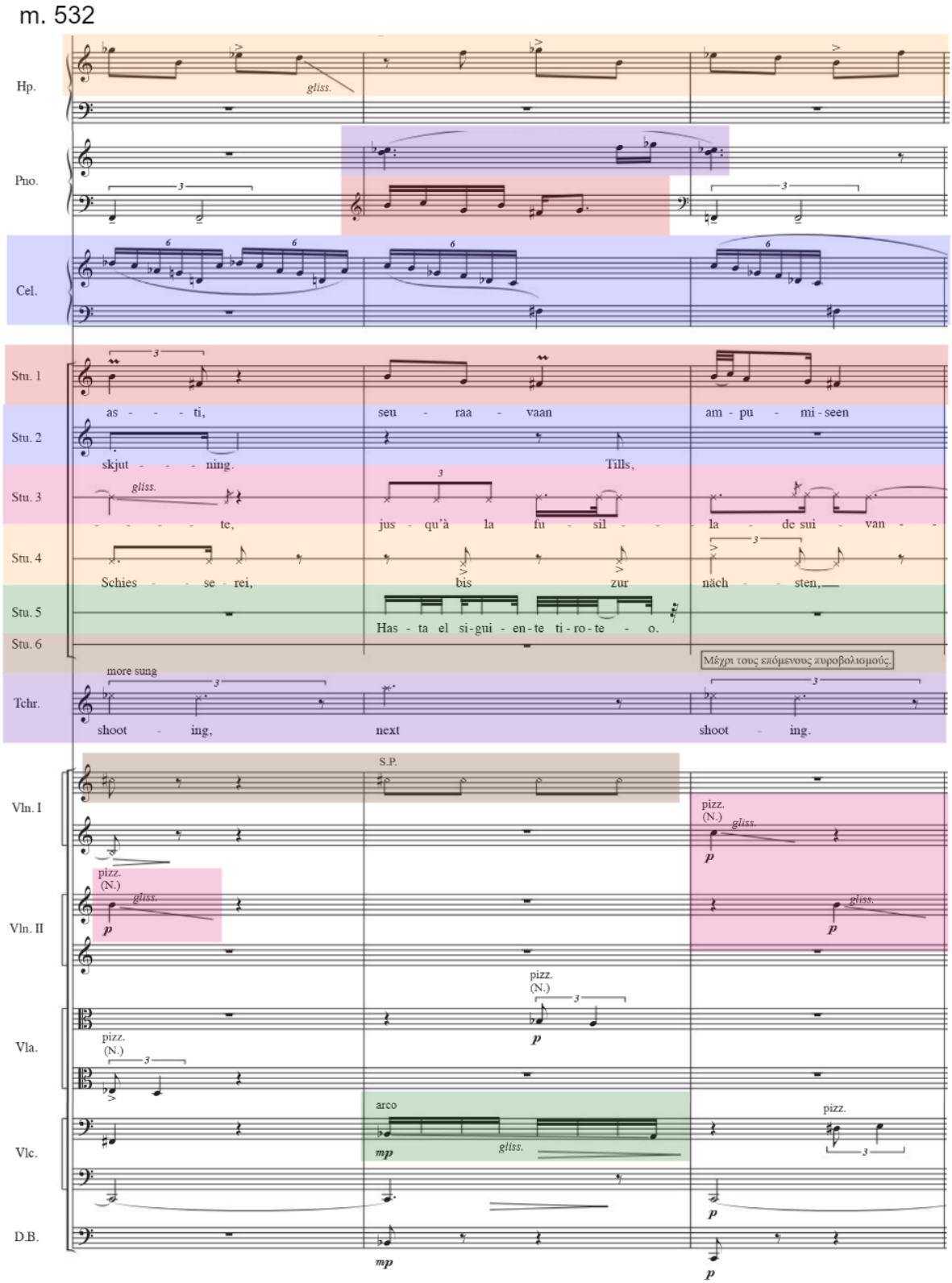
pitches, and Cecilia's tightly packed minor second piano clusters. In this moment, nearly every musical identity is present. However, fascinatingly, the chorus remains silent.



Ex. 7: mm. 512-517, showing the overlap and quick transitions between characters' associative gestures

m. 532

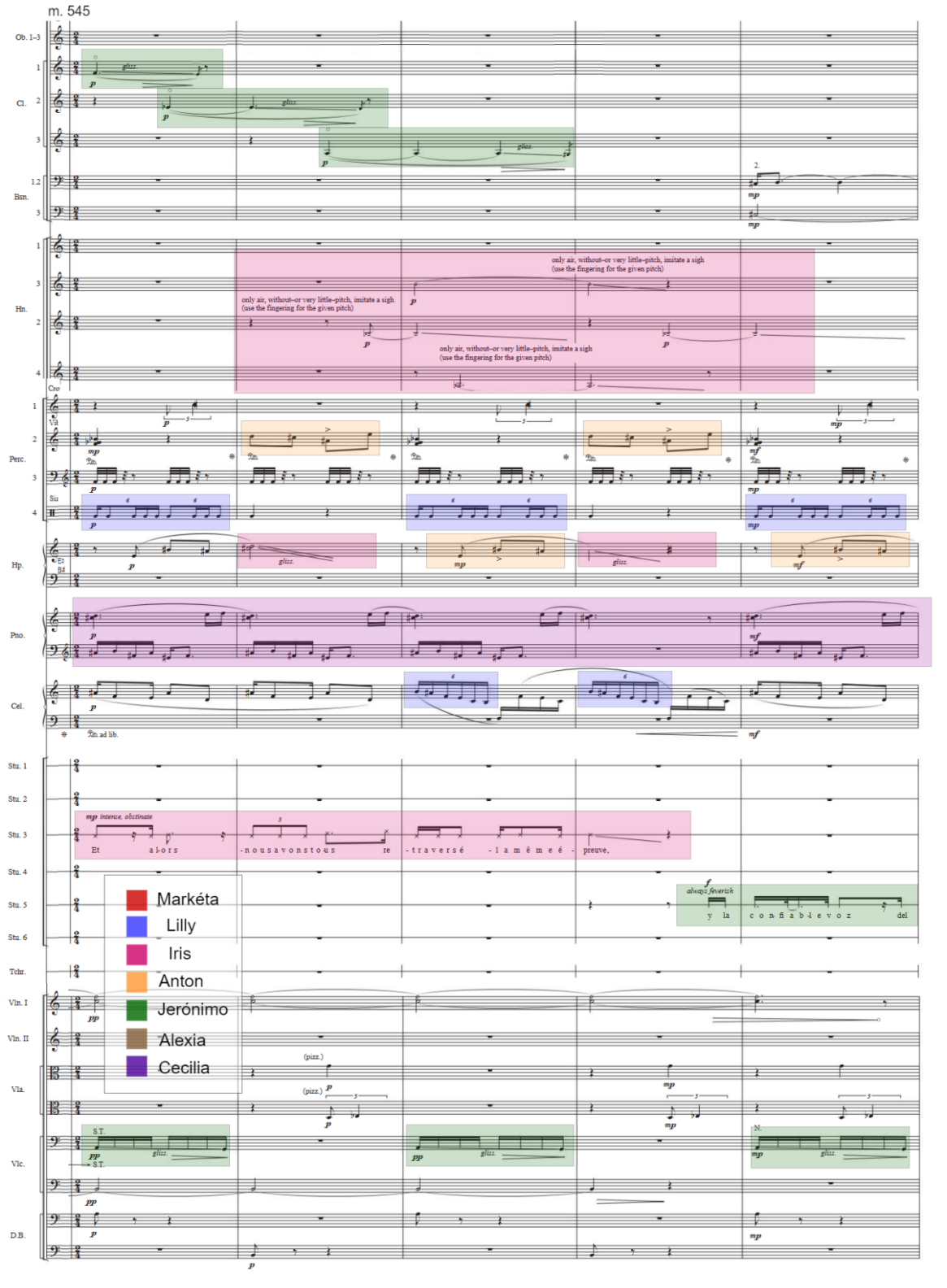

Markéta
Lilly
Iris
Anton
Jerónimo
Alexia
Cecilia
Fl.
2. Picc.
Alto Flute
3. A. Fl.
Ob. 1–3
Cl.
Bsn.
Hn.
only air, without–or very little–pitch, imitate a sigh
(use the fingering for the given pitch)
Tpt.
Tbn.
Tuba
Timp.
Crot.
Vibr.
Perc.
Tam-t.
Sizz. Cym.
gliss.
l.v.



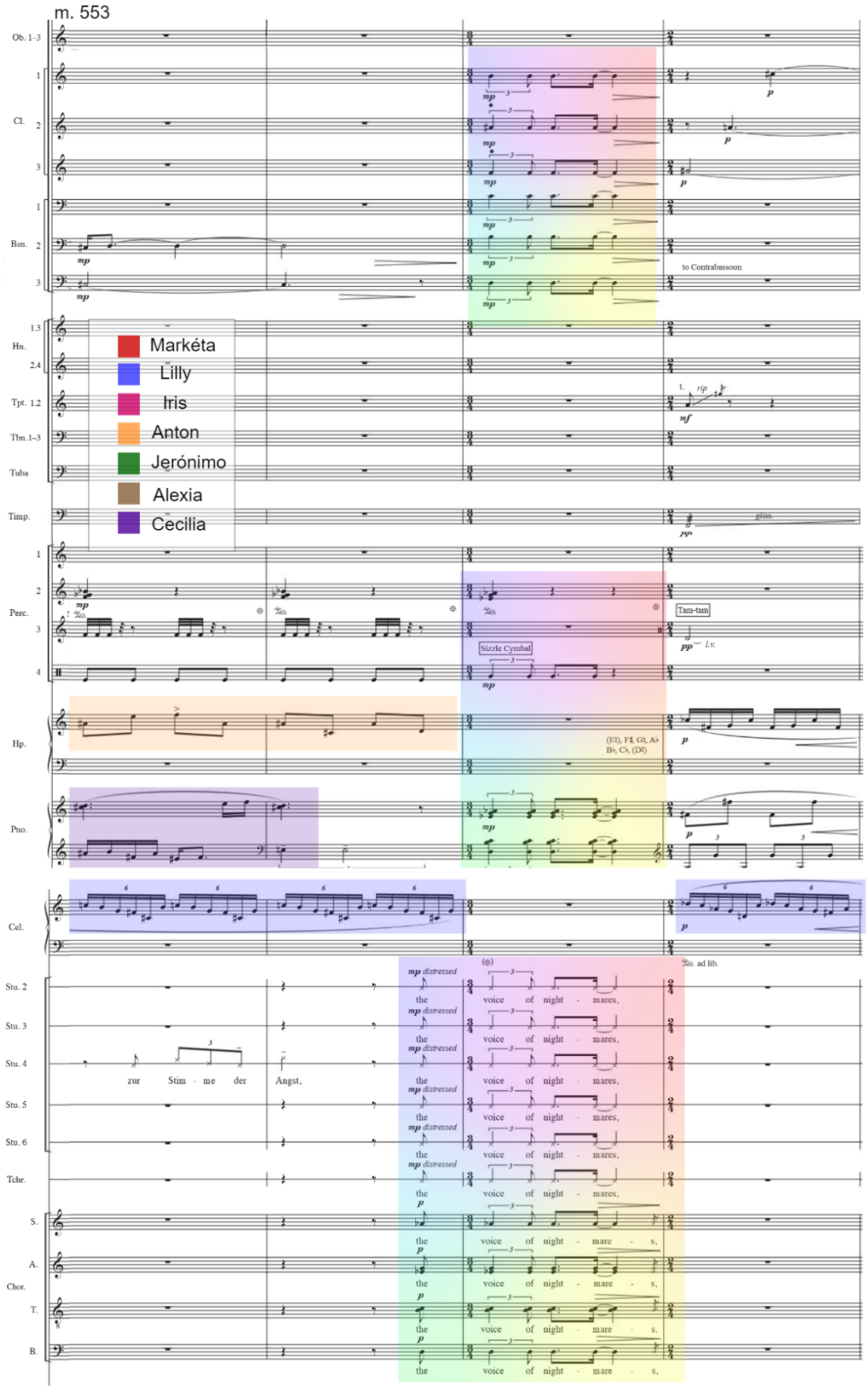
Ex. 8: mm. 532-534, showing the dynamic overlap of character motifs

Following this unison, the scene briefly returns to a back-and-forth of individual text. Yet, the orchestra does not follow suit. Instead, it continues layering multiple character motifs. Iris begins with the line "And then we went through it all again," while Jerónimo's half step glissandi, Cecilia's m2 piano clusters, and Lilly's celesta sextuplets sound around her. Jerónimo then extends Iris's thought with "and the trustworthy voice of the newscaster…" still enveloped in other's motives. Finally, Anton completes the sentence: "…became for us the voice of fear."

At measure 555, the musical texture drops almost instantly. After many measures of overlapping motives, all onstage characters state, in rhythmic unison and in English, "The voice of nightmares." The clarinets, bassoons, and piano align with the spoken rhythm, spelling I3 of sc(013478). This abrupt shift from complicated and overlapping motives to this single, unanimous statement brings the scene to a climax, producing one of the opera's most striking musical moments.



Ex. 9: mm. 545-548, “And then we went through it all again,” “And the trustworthy…”



Ex. 10: mm. 553-6, “The voice of nightmares.”

Step 5 - Interpretation, Case Study 2, Act 3, Scene 13

Having traced the motivic and textural details of Act 3, Scene 13, I now turn to interpretation. As in the previous case study, this step considers how Saariaho defines the musical boundary between the individual and communal, how her associative motives work to signal memory and trauma, and how this music asks listeners to carry empathy for the characters. In this scene, several features stand out in relation to these concerns, including the subtle use of microtones, the porous musical boundaries of some (but not all) characters, the expanded role of the chorus, and the oscillation between moments of overlap and separation among the characters' musical worlds.

How does Saariaho musically define the boundaries between the individual and communal?

As shown in the previous case study, Saariaho depicts these characters and their relation to their experience through the permeability of their musical identities. This scene further exemplifies how these boundaries can be both protective and invasive. Characters like Lilly and Cecilia are granted strong musical boundaries between themselves and others. Their motives appear when they speak in the scene and disappear when they cease. Jerónimo, however, is once again denied this autonomy. Despite being one of the most politically articulate characters, his musical motives are consistently interrupted, intruded upon, and morphed, such as when Alexia's *colla voce* texture cuts through his statements in m. 479. This suggests a surprisingly contradictory logic of trauma processing versus character personalities. Jerónimo critiques public displays of grief, opportunistic leaders, and failed systems. Yet, the character who critiques power the most is denied power over his own sonic environment. His testimony is constantly at risk of being blurred, interrupted, or overshadowed by the voices around him. By portraying this

seemingly contradictory nuance, Saariaho asks whether survivor testimony is ever secure, or if it is vulnerable to being overtaken by louder voices of the world.

In addition to this, the role of the chorus becomes significant in understanding how the survivors interact with the public. Early in the opera, the chorus behaves somewhat like an amplifier. They echo syllables and phonemes of a character's spoken text, reinforcing the presence of those on stage. But here, they break out of that role into the role of the public observers. When they echo Anton's German text, translated into English, ("Gradually, our crowd was divided into two groups…") they literally translate his personal experience into their awareness in a way that is comprehensible to them. In doing so, Anton's experience is filtered through this linguistic barrier. Their presence in this scene thus demonstrates how individual memory can become absorbed (and morphed) within collective memory, a point I will further elaborate on when discussing how the work solicits empathy for victims.

How are associative musical elements (motives, textures, timbres) assigned to and transformed across characters to depict memory and trauma?

Additionally, the use of microtones in this scene is striking. At the beginning of this excerpt, Alexia enters with pitch class Ab. Yet, almost immediately, the A quarter-flat in m. 427 disturbs the texture. Microtones are rare in *Innocence*, which makes their appearance here significant. Outside of this scene, the A quarter-flat never appears in Alexia's music again. For a character reflecting on the performances of grief, this intonational inflection could suggest how fragile or upsetting such rituals are. Perhaps also this might suggest that traumatic memories can be subject to decay or liminality when brought into the public, and the microtone could reflect a literal deterioration or transformation of her memory.

Furthermore, this scene presents moments where multiple character motifs stack on top of one another. On the line "Everyone grew weary of the mourners," the score intentionally obscures the characters' gestures. Motives that otherwise mark individuality begin to smear together, producing an overwhelming listening experience. But when the libretto shifts to "We became the unfortunate reminders," the musical boundaries return with clean delineations. Each character reclaims their distinct motives, timbres, instrumentations, and harmonic spaces. Saariaho mirrors the text's reflection on how trauma both binds people together and isolates them within their own private grief.

How does the music solicit empathy for victims and survivors?

In addition to the previously discussed morphing, overlap, and interruptions of characters' motives, language—as both a musical and dramaturgical feature of each character—becomes one of the most striking ways that Saariaho and the creative team portray the survivors' struggles. The score, in its beginning notes, declares that English is "the communication language," functioning as the opera's *lingua franca*.[73] Unlike Finnish, Czech, French, German, Spanish, or Greek, English functions as a bridge language. It enables communication between characters who do not otherwise share a native tongue, such as Tuomas, the Finnish groom, and Stela, his Romanian bride. When they converse, they use English; when they reflect inwardly, they revert to their own languages. In such a multilingual context, the dominance of English is purposeful. Its role as *lingua franca* perhaps reflects English's status as a marker of transnational exchange and globalization.

[73] Kaija Saariaho, Innocence, (Wise Musical Classical: 2021).

So, when the chorus both translates Anton's text and participates in the group's "the voice of nightmares," they both smooth over nuances in the character's experience and uninvitedly participate in their collective fear. The audience is therefore invited to feel the tragedy of this exchange, recognizing that for the survivors to be understood by the public, their unique experiences must be filtered through a globalized tongue. Empathy, therefore, can be solicited through the listener's awareness of what is being lost in translation.

Additionally, the scene's final moments escalate the emotion of this dynamic. As the text arrives at "And then we went through it again," musical identities begin to stack, overlapping into contrapuntal layers. By the time the characters and chorus repeat "until the next shooting," all sonic identities are entwined. The repetition of the text combined with the overlapping motives amplifies the cyclical nature of trauma: grief recurs, public attention wanes, and survivors continue to carry the memory of the tragedy.

Thus, this case study effectively demonstrates the creative team's approach to the opera's central questions regarding individual and collective boundaries, portrayals of trauma, and empathy. Saariaho defines these boundaries as a membrane that can be both permeable and impermeable. She then also assigns motives that both anchor and destabilize the characters' presences, allowing them to intrude, decay, and overlap to portray memory and trauma. And through these compositional choices, the audience is invited to share in these characters' grief while also understanding how, as outsiders to this fictional tragedy, there will always be nuances that are lost in translation. The next case study will take this understanding and further complicate it by introducing the morally complex question of guilt and innocence.

Step 4 – Music Analysis, Case Study 3, Act 4, Scene 19:

To build upon the previous findings, Case Study 3 turns to Act 4, Scene 19 ("Before the Shooting), a flashback that questions the audience's understanding of the characters. Here, the characters are transported back to a year before the shooting where the students are mocking and ostracizing the future perpetrator. Markéta takes center stage, singing a taunting song at Lilly's request, while Lilly and Iris exchange dialogue that reveals more of the social dynamics leading up to the tragedy. Unlike earlier scenes in which characters' motifs were either clearly delineated or entangled with each other, the music in this flashback is marked by motivic distortion through recollection and realization. Across these three characters, the audience witnesses a fractured memory that blurs the lines between "guilty" and "innocent."

The libretto for this scene is as follows:

> Markéta: *singing* Frog-boy, frog-boy. I was good at coming up with songs, and the most popular ones were those I made about other students. That's why Lilly asked for a song, for a song about that boy, the frog-boy, frog-boy.
>
> Lilly: Because that boy looked like a frog, and laughingly I said that everyone would understand why I had left him.
>
> Iris: You played with his feelings, Lilly, just like you always have with boys, and then you left him when you wanted your Jerónimo, your former boyfriend, back. And Jerónimo and his friends took him to the shower room and ordered him to undress. And they did all sorts of things and filmed it all and shared the videos with everyone. And everyone laughed at length at those videos, but they do not laugh anymore.
>
> Lilly: That had nothing to do with what happened later. All of this was a year before that day.
>
> Iris: That's what you think, Lilly.[74]

In what follows, I focus on three features: Markéta's unusual harmonic palette, Lilly's unusual orchestral texture, and Iris's modified motifs that tie her character to her complicity in

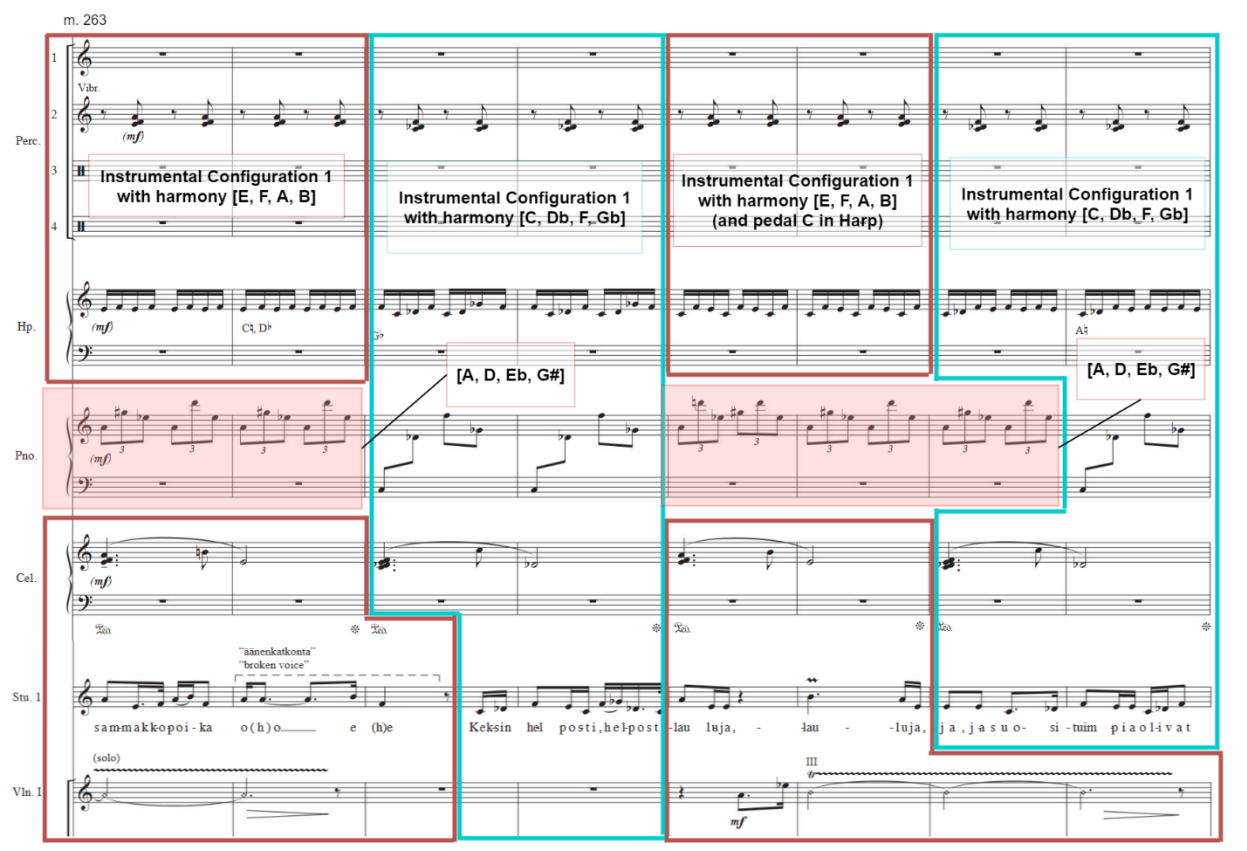
[74] Kaija Saariaho, Innocence, (Wise Musical Classical: 2021). Translation from score.

the crime. Together, these three points show how Saariaho can use these same motivic markers as points of fracture amongst the survivors, rather than unity.

The scene begins with Markéta. Her mocking song is organized into four vocal phrases, each punctuated by *Kulning* calls. Rather than reusing the same gestural palette assigned to Markéta in the "present day," Saariaho combines and shuffles through a fixed pool of rhythmic gestures (offbeat stabs, sixteenth note pulses, eighth and triplet figures, dotted quarter and eighth clusters, and a consistent violin trill) across the instruments typically associated with both herself and Lilly: the vibraphone, piano, harp, and celesta.

At the opening (m. 261), the configuration is clear. The vibraphone articulates the offbeat stabs, the harp drives steady sixteenth-note pulses on E and F, the piano outlines eighth-note triplets on [D, Eb, G#, A] (sc(0167)), and the celesta layers dotted quarter and eighth clusters. Against this texture, Markéta's vocal line draws on [E, F, A, B] (sc(0157)), leading into the first *Kulning* call.

As the next phrase begins in m. 265 ("I was good at…"), the texture remains static, but the harmony subtly shifts. The vibraphone and celesta continue their previous rhythms, but with [C, Db, F, Gb], sc(0145), while the harp arpeggiates this chord in continuous 16ths. Markéta's voice expands accordingly, extending her collection to [C, Db, E, F, Gb, A], sc(012569). The out-of-place [D, Eb, G#, A] harmony will be significant later when considering the character of Lilly. This process is shown below in Example 11.



Ex. 11: mm.263-70, showing the modular organization of Markéta's music with color coding. Sections boxed in red use harmony [E, F, A, B], while sections boxed in blue use harmony [C, Db, F, Gb]. The measures highlighted in red use [A, D, Eb, G#].

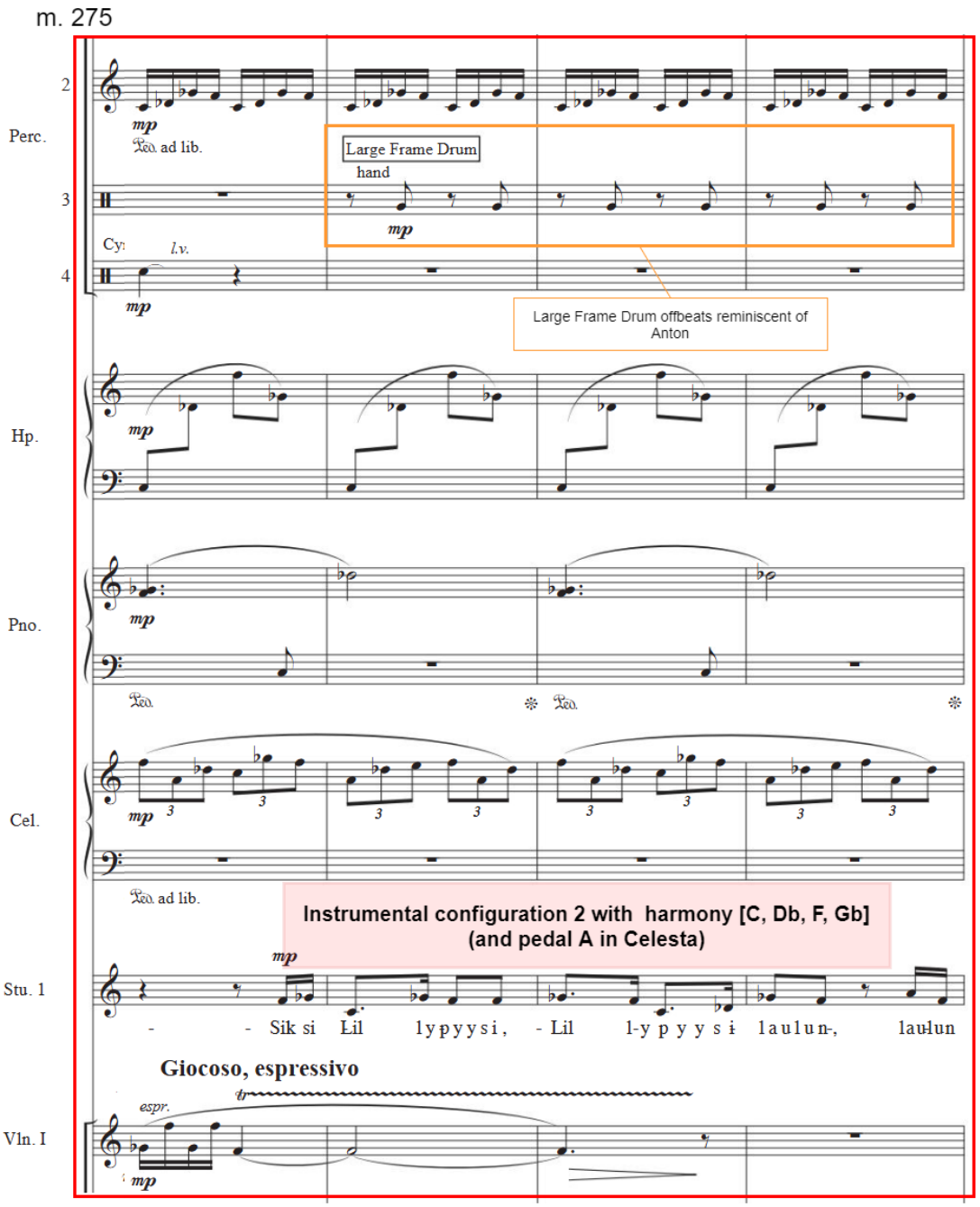
The most dramatic reshuffling of rhythmic gestures comes with her third phrase, "That's why Lilly asked for a song." If the previous organization shown in Example 11 is "Instrumental configuration 1," here, the orchestra organizes into what I call "Instrumental configuration 2": the vibraphone presents the sixteenth note pulses, the harp takes on the eighth-note lines, and the celesta adopts the triplet figures. The piano, in turn, takes over the dotted quarters and eighths, while a new color enters: the frame drum, articulating the offbeat stabs that originally belonged

to the vibraphone. This sudden appearance of percussion recalls Anton's world, casting a faint allusion to his presence within the memory.[75] This is shown below in Example 12.

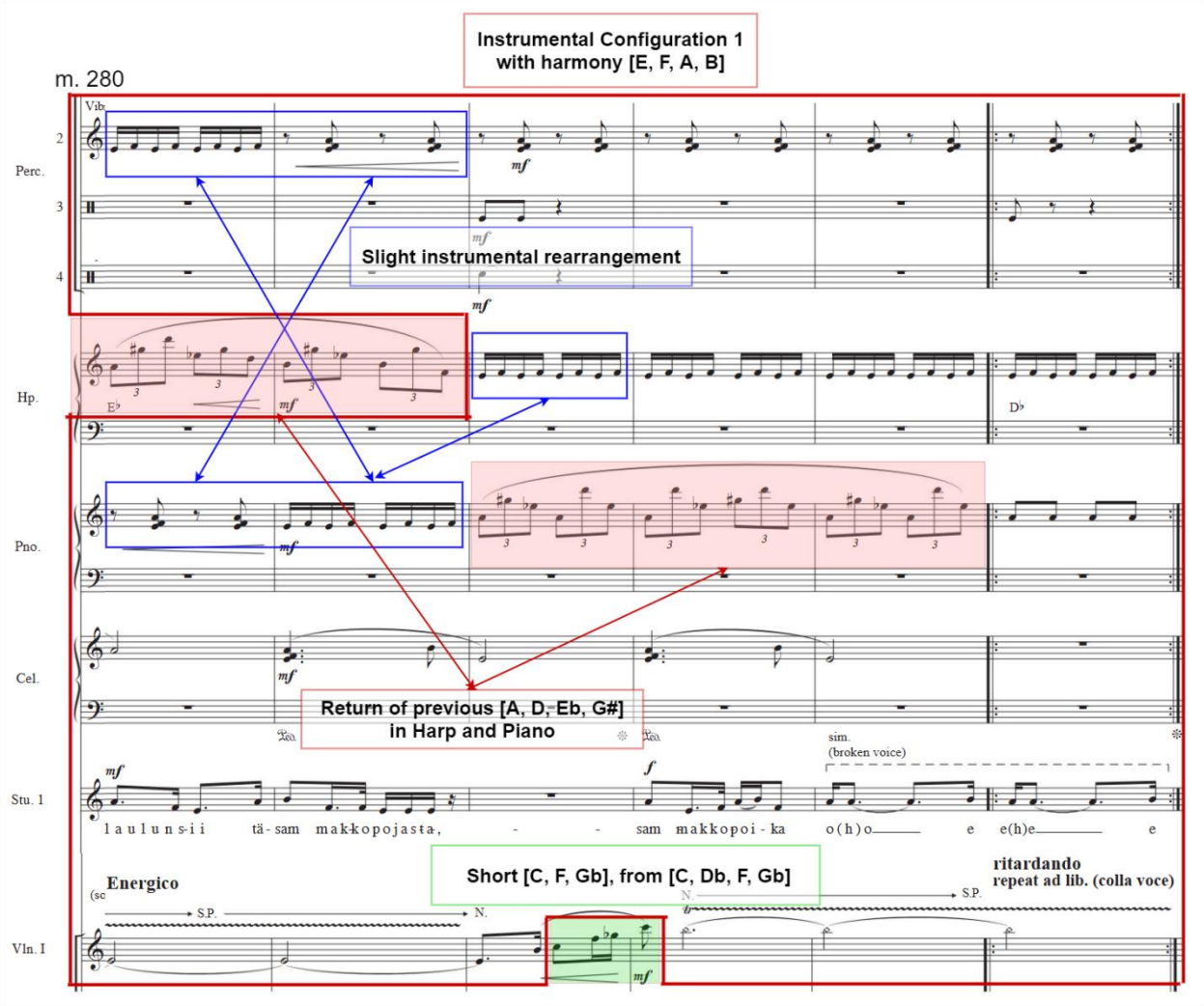
By her final phrase in m. 280, the ensemble cycles back to "instrumental configuration 1", including the original [E, F, A, B] harmony, creating a closed loop. Each phrase is thus marked not only by Markéta's voice and *Kulning* calls, but also by a new rotation of the same handful of instrumental gestures. This redistribution of existing gesture creates a cycle of role-swapping somewhat reminiscent of a children's game in which participants change positions or responsibilities. This emphasizes the childish, almost game-like character of the scene while drawing an unsettling sonic parallel to adolescent cruelty.

When Lilly enters at m. 286, the texture shifts noticeably. Instead of the recombined gestures that marked Markéta's section, Lilly's accompaniment is built around a process of accumulation. To begin with, the celesta, her most consistent instrumental marker, plays sixty-fourth notes rather than its typical sextuplets, already suggesting a rhythmic distortion of her musical identity. Here, the celesta repeats just two notes, Db and C, for four beats. In the following measures, the figure expands: four groups of three notes, [Bb, C, Db], then three groups of four notes [A, Bb, C, Db], two groups of five [F#, A, Bb, C, Db], and finally the complete six-note collection assigned to her: [F#, A, Bb, C, Db, D].

[75] Though Anton does not appear nor is he referenced directly in this scene, subtle gestures like this combined with the staging at the Aix-en-Provence premiere suggests complicity in the bullying of the perpetrator. In the moment where Iris reveals that Jerónimo and other bullies took the perpetrator to the restroom, undressed him, filmed him, and shared the video, Anton is shown holding up a phone to the unfolding drama, supposedly recording it. This suggests that at the very least, he partook in sharing the video and laughing at the perpetrator.



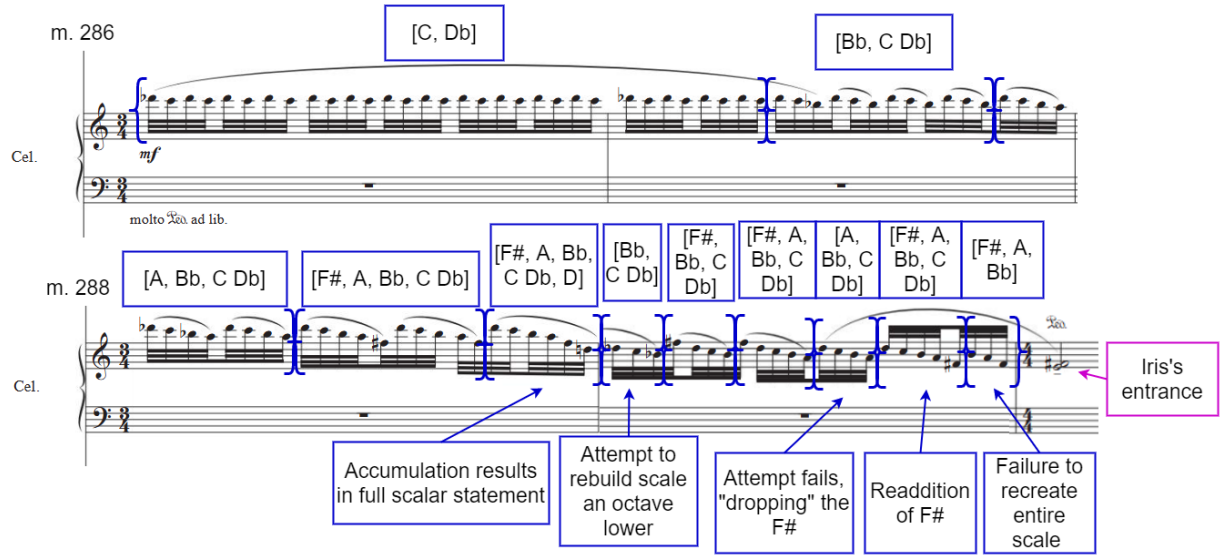
Ex. 12: mm. 275-8, showing “Instrumental configuration 2”, where rhythmic units are reshuffled between instruments and all instruments use the harmony [C, Db, F, Gb].



Ex. 13: mm.280-285, showing the return to Instrumental configuration 1 with slight rearrangements of rhythmic motifs, all supported by harmony [E, F, A, B], with [A, D, Eb, G#] in the piano and a brief [C, F, Gb] in violin 1.

After this first successful formation of Lilly's scale, the pattern restarts an octave lower, but with significant differences. It begins again with a three-note cell, [Bb, C, Db], then adds F# *above* Db (as opposed to below, as it originally had done) to create [F#, Bb, C, Db]. The set continues to grow, adding A to the bottom of the scale to create [F#, A, Bb, C, Db]. However, this expansion soon falters. The F# "drops out," leaving only [A, Bb, C, Db], but then returns in the next statement, recreating [F#, A, Bb, C, Db]. The pattern then collapses one final time, reduced

to the trichord [F#, A, Bb] just before Iris's entrance interrupts the texture entirely. This process is demonstrated in Ex. 14 below.[76]



Ex. 14: mm.286-7, showing the failed accumulation process before Iris's entrance

Beyond this stuttering accumulation process, Lilly's harmony here gives further insight into her relationship with Markéta—a complementary one. Here, the Celesta (as Lilly's most consistent instrumental marker) performs the set [F#, A, Bb, C, Db, D]. The complement to this set, [Eb, E, F, G, G#, B], is provided in Markéta's music. [E, F, A, B] in her first harmony, [C, Db, F, G] in her second, and [D, Eb, G#, A] in the piano (and momentarily, the harp). Together, they create a complete twelve-tone aggregate.

Seen in this context, the piano's anomalous [D, Eb, G#, A] suddenly makes sense, whereas before, this set did not fit into any of Markéta's harmonic worlds. This relationship is not merely a coincidence. It represents a relational complicity in the bullying: Lilly requested the song, and Markéta fulfilled the request to gain popularity and favor amongst other students.

[76] This process is reminiscent of Saariaho's idiosyncratic approach to interpolation, a process where singular elements of sound are altered, added, or subtracted to create subtle transformation. For more information, see Saariaho (1987)

Markéta's mockery and Lilly's cruelty, though voiced separately, together enclose the memory in a complete musical structure. I will further elaborate on this point when I interpret my findings in Step 5.

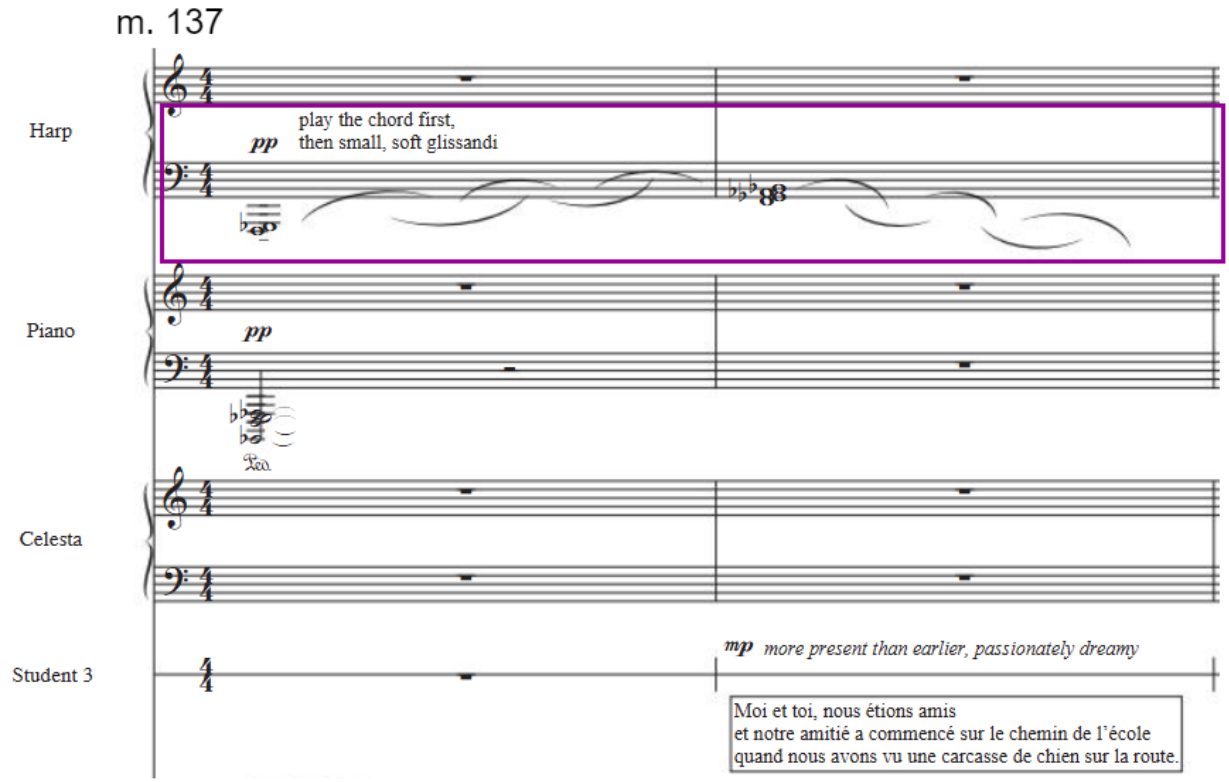
Later, when Lilly speaks again after Iris's input ("All this had nothing to do…"), her same texture continues, but with greater density. The celesta repeats its process of accumulation almost identically to her first phrase, but Iris does not interrupt her this time, allowing the scales to continue to plummet from the celesta's highest register down to its lowest. The piano partially joins this gesture, at first doubling the celesta's last beats of each measure, then joining its dramatic descent until the end of the phrase.

Iris's music introduces another layer of instability, but in a more disturbing register. Her characteristic textures return, such as the airy breath tones in the woodwinds and the broad string glissandi, but they are also accompanied by uncharacteristic sweeping harp gestures. These flourishes first appeared in Act 4, Scene 17, where Iris confesses to planning the shooting with the perpetrator. In this earlier scene, she begins with her usual vocal delivery of breathy sighs, but eventually foregoes this delivery entirely, instead speaking her text in a spoken register with the instruments playing *colla voce*.[77] She states disturbing lines such as: "While the others thought about their first kiss, you and I were thinking about whether we would force the students into the classroom and would examine their fears up close, straight in the eye. Or whether we would pick our victims from afar through the gun sights," and "I felt like I was walking the path that had always been meant for me. It was like finally putting on a sweater that fitted perfectly."[78] Previous to this confession, there were very few clues to suggest that Iris had any

[77] Though this is a gesture that would usually point towards Alexia, I find that this choice was more likely made to help Iris deliver her text and provide necessary exposition quickly, rather than to suggest the presence of Alexia.

[78] Translation from score

complicity in the crime,[79] therefore, this scene arrives as a climactic shock to the audience. An example of her disturbing dialogue accompanied by these harp sweeps is shown below in Example 15.



Ex. 15: Act 4 Scene 17, "You and I, we were friends and our friendship started on the way to school when we saw a dog's carcass on the road." Harp sweeps boxed in purple

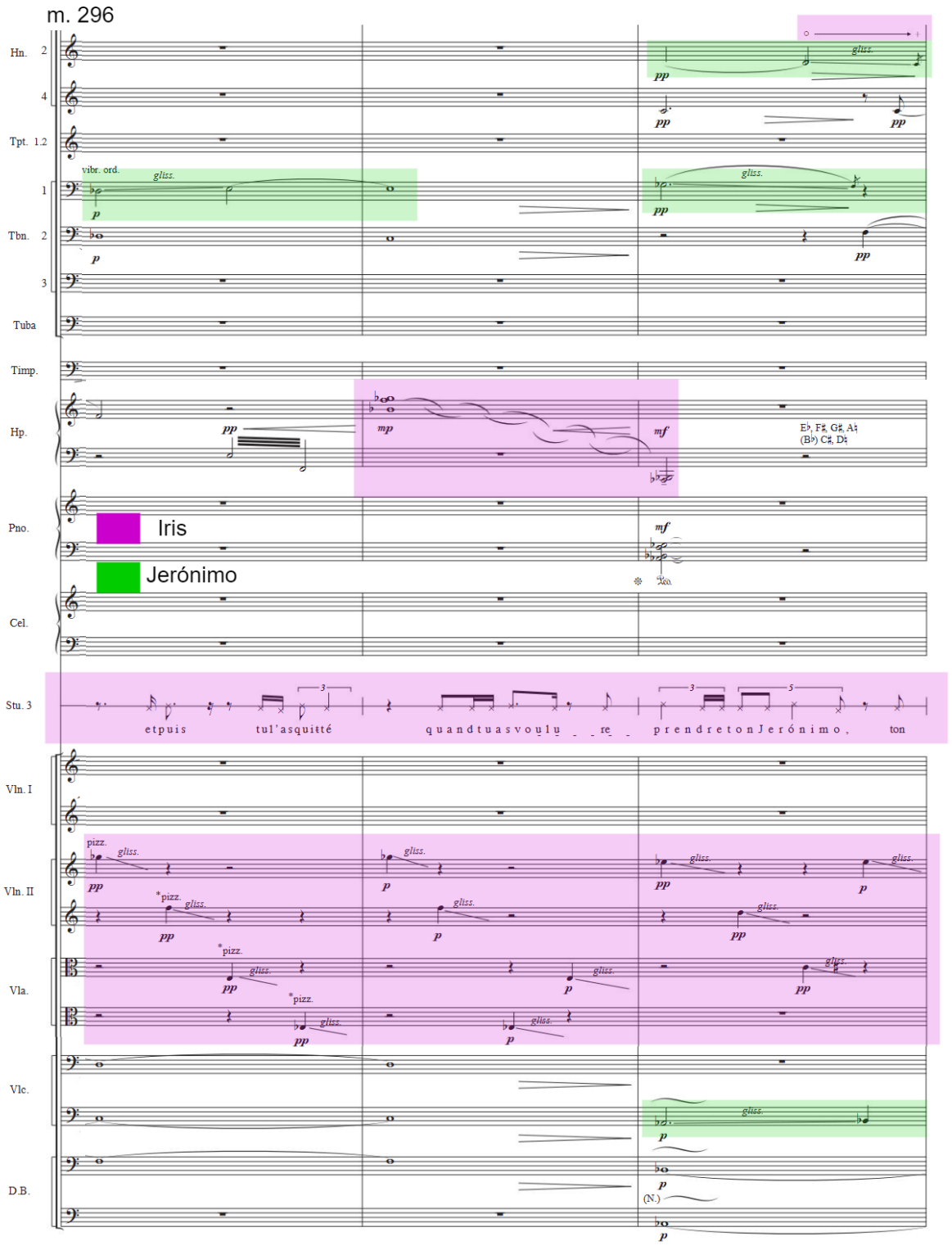
The reintroduction of these harp sweeps in Scene 19 is especially striking then, as a sonic callback to Scene 17. Their presence marks this memory with the same aura of collusion, lending her timbral palette an unmistakable link to her violent obsessions. Alongside these harp sweeps, the rest of Iris's musical environment continues in more familiar terms with airy breath tones in

[79] In the Aix-en-Provence premiere, one such foreshadowing of Iris's role in the crime is placed in the staging during the transition from Act 2, Scene 9 into Act 3, Scene 10, then again in Act 3, Scene 11. Here, the characters in the realm of memories reenact a dramatization of the tragedy. At first, they are alarmed by a sudden non-staged sound, then they begin running through doors seeking shelter. Only Iris wanders the hallways slowly and calmly, knowing that her role in planning the crime granted her immunity from the shooter. Only after the revelation in Act 4, Scene 17, does that detail gain contextual clarity.

the winds and broad string glissandi that, together with the piano, spell the highly chromatic set [C, C#, D, Eb, E, F, Gb], sc(0123456). When Iris turns her attention to Lilly's romantic entanglement with Jerónimo, her usual glissandi contract from wide, sweeping gestures to narrower half-step slides—gestures far closer to Jerónimo's sonic identity than her own, even if the instrumentation differs. These brief distortions destabilize Iris's otherwise consistent timbral environment and provide a musical link between the survivors and Iris's obsessive hatred. This shrinking of her glissandi can be seen below in Example 16.

Across this scene, these three characters and their motives reveal how Saariaho deforms musical identities through recollection and memory. Markéta's sound world becomes tainted by Lilly's and features circulating instrumental gestures rather than her usual accompaniments. Lilly's own music, typically marked by her Celesta sextuplets, attempts and fails to reconstruct the harmony that defines her in later scenes. And Iris bears the imprint of her criminal complicity, embodied by the sweeping harp gestures. Through musical distortion, Markéta's, Lilly's, and Iris's dramaturgical recontextualization is mirrored in the scoring in an unsettling, yet palpable way.

Compared to the motivic layering of Case Study 2, the interactions here are considerably more shocking. Instead of building toward collective expression as they previously had, they expose fractures, corruptions, and moral shadows that change how the past is understood by the audience. These observations prepare the interpretive work of the next step, where I examine how these blurred identities connect to the opera's larger social themes.



Ex. 16: mm. 296-8, “And then, you left him when you wanted your Jerónimo…”

Step 5 - Interpretation, Case Study 3, Act 4, Scene 19:

The musical interactions in the preceding analysis reveal a significantly different treatment of memory compared to the collective mourning of Case Study 2. Here, in Case Study 3, memory divides the survivors rather than unifying them, and in turn, this complicates the intersections between those who enacted and enabled violence. In this interpretive step, I again return to my three guiding questions regarding boundaries between the individual and collective, portrayals of trauma and memory through associative character elements, and empathy for survivors. Through an exploration of these questions, I find that Saariaho's music exposes both the instability of the narrative and an inability to cleanly delineate between the guilty and the innocent.

How does Saariaho musically define the boundaries between the individual and communal?

To begin with, the narrative takes a turn in the second half of the opera by questioning the audience's understanding of who is guilty and who is innocent. This, in turn, redefines how we understand individual and group identities. In Act 4, Scene 17, before the current case study, Iris's role in the crime is narrated retrospectively through her monologue. She recalls meeting the shooter, befriending him, and helping to plan the attack. Her confession deepens the audience's perception of the crime by revealing that the shooter was not the only perpetrator, but was aided by Iris, previously understood as one of the victims. This creates a "guilty" group of two. However, this seemingly simple division of characters into "guilty" or "innocent" becomes further muddled in the current scene, Scene 19, when Markéta, Lilly, and Jerónimo are revealed to have tormented the perpetrator through intense bullying. Iris hints that this was one of the reasons the perpetrator carried out the crime, but her previous reflections suggest that they both

had violent fantasies long before the bullying. In this way, this moment blurs the line of moral guilt, creating three groups: "Guilty" (Iris, perpetrator), "Enablers" (Markéta, Lilly, Jerónimo), and "Innocent" (Cecilia, Anton, Alexia).[80]

Oksanen's libretto heightens this uncertainty. The characters oscillate between using the past and the past perfect tenses ("I was always good at writing songs," "Everyone would understand why I had left him," "You played with his feelings"), producing a state between confession and denial. The final exchange in this scene: Lilly's "That had nothing to do with what happened later. All of this was a year before that day," followed by Iris's "That's what you think, Lilly," clearly states this scene's central moral dilemma. The recollection of events through the eyes of two survivors quickly devolves into an argument over what truly occurred in the past. This adds another layer of understanding to how Saariaho obscures the boundary between individual and communal. In addition to the experiences themselves being susceptible to intrusion and distortion as seen in previous case studies, memory can also act as an agent of instability, fracturing the truth into several incomplete fragments, dispersed among characters.

How are associative musical elements (motives, textures, timbres) assigned to and transformed across characters to depict memory and trauma?

The score emphasizes the instability of memory through motivic distortion. Unlike previous case studies, where musical identities could be clearly mapped (even with overlaps), here, they return as distorted parts. Markéta's harmonic vocabulary becomes twisted by Lilly's request for a mocking song, and her parts rotate through a pool of rhythmic gestures. This

[80] The opera continues to complicate the topic of complicity, even breaking the barriers between the "realm of memories" and the "real world." At the end of the opera, it is revealed that Tuomas, the shooter's younger brother, also helped Iris and the perpetrator plan the crime. Both Tuomas and Iris backed out of the plan at the last second, leaving only the perpetrator to carry out the violence.

suggests both a tie to Lilly and a loss of control over her identity as she participated in the bullying of the perpetrator, hoping to be accepted by her peers. Her harmonies construct the missing complement to Lilly's harmonic set, together creating an aggregate that can be seen as musically indicting Markéta in Lilly's cruelty. In Lilly's own music, her celesta texture collapses upon itself and its process of accumulation consistently breaks down, as if her own recollection is stumbling and faltering.

Iris's sound world, dominated by the reintroduction of harp sweeps from her monologue in Scene 17, bears the sonic imprint of her violent obsessions. The contraction of her glissandi toward Jerónimo's half-step slides further directs her hatred towards the characters that tormented her friend. This portrays the contamination of her memory by hatred both in the moment and after the fact. In this way, Saariaho uses motivic distortion to represent how memory itself can become corrupted by emotional residue. Through the distortion of each character's musical identity, she shows how these motives can do more than represent and bind characters; they can also morph and distort to show the messy process of remembrance.

How does the music solicit empathy for victims and survivors?

Up until this scene, the audience likely carried a great amount of empathy for the survivors. Act 4, Scene 19 presents a challenge to this moral stance. My third guiding question: "How does the music solicit empathy for the victims and survivors?" becomes especially relevant here, as some of the characters' past actions were not only cruel in and of themselves, but also implicated them in the violence.

If Case Study 2 best represented Saariaho's original vision of 13 strangers all viewing "The Last Supper," then this Case Study could be seen as the strangers arguing over their

interpretations of the work. Here, each character's associative material resists unity, revealing a reconstruction of the past that belongs to no particular individual. The libretto does not assign guilt to any singular voice, and Saariaho reflects this in her music by diffusing complicity throughout the cast. Markéta's *kulning*, once a marker of her vulnerability, becomes an act of mockery. Lilly's celesta figure, previously a stable, consistent anchor, now weakens under emotional pressure. Iris's glissandi, formerly colored by trauma, becomes reframed by her complicity. These transformations do not solicit empathy in a straightforward way. Rather, they ask the listener to sit with the discomfort of multiple truths, and to recognize that recollections can both reveal and obscure moral truths.

At the *Innocence* Symposium, when asked about the meaning of the opera's title, Saariaho remarked: "In my opinion, it suggests that no one is completely innocent. Everyone at least feels guilt."[81] This notion of shared, unevenly distributed guilt runs through the opera in subtle ways. Act 4, Scene 19 portrays this idea musically. Motivic overlap still signals connection, but it is a connection rooted in shared guilt rather than shared grief. The communal overlaps that once evoked empathy for all victims now splits into a tense coexistence of multiple truths. What once unified now differentiates.

All together, these elements dismantle any possibility of collective redemption, an idea that echoes into the present realm at the wedding--a point I elaborate on in the following summary. Saariaho's music then becomes a mirror in which each character sees not only their own guilt but its effect on others, whether they want to admit it or not. Thus, while Case Study 2

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[81] Saariaho, *Innocence Symposium*. Full quote: "We talked about the title of the piece for a really long time. We sent emails and then one day Aleksi came up with *Innocence*. And we agreed on it. Sofi, what do you think it refers to? In my opinion, it suggests that no one is completely innocent. Everyone at least feels guilt. I was so attached to the mother figures, and mothers especially always feel guilty now." This concept of feeling guilt regardless of complicity is another theme that runs through the opera, especially in the "real world," where the parents of the shooter, their priest, and Markéta's mother all express a sense of guilt and regret over not having the miraculous foresight to prevent the crime.

used sound to bind survivors into a shared lament, Case Study 3 reverses that exact process. The past resists resolution and remembrance only complicates any process of closure.

Case Study Summary:

Across these three case studies, *Innocence* presents musical identity, memory, and trauma as complexly intertwined yet somehow still inseparable. Each scene, viewed through the six-step framework, has demonstrated a different mode of how the opera stages remembrance and healing. In the first case study, Anton and Jerónimo's worlds were articulated through distinct harmonic, timbral and rhythmic materials. At first, these motifs appeared only when they spoke, but the overlap of their motifs suggested a subconscious connection between their experiences that could not otherwise be gleamed from text and staging alone. The analytical focus in this case study then showed how Saariaho mirrored the isolated, yet shared, experience of trauma survivors, each locked in their own musical vocabulary, but still subject to interference.

The second case study traced how these boundaries between individuals continued to blur through communal remembrance. Through intersecting textures, motivic permeability, and choral mediation, the opera created a sense of collectivity, a momentary reconciliation of distinct identities all joined together in mourning. Of all the moments in the opera, this scene most closely reflects Saariaho's original idea to depict 13 unique experiences of witnessing da Vinci's "Last Supper." All characters in the realm of memories recall their experiences during that day, and in this climactic scene, their motifs stack and overlap as they lament: "Until the next shooting." Eventually, the concept of individual identity dissolves entirely as they all unite on the shared traumatic response to newscasters: "The voice of nightmares." The chorus then threatened to destabilize this unity. By translating and repeating the character's text in English, the chorus

risked erasing their individual experiences by absorbing their voices into a generalized web of survivors.

The final case revisits the past through fractured memory. Act 4, Scene 19 removes the possibility of shared healing by confronting the darker truths of the survivors' complicity. Here, musical interconnections suggested cruelty towards the perpetrator, complicating the simple division between guilty and innocent. Markéta's taunting song, Lilly's faltering celesta accumulations, and Iris's sweeping harp gestures exposed how memory can be unreliable, filtered through shame and denial. Where the earlier case study's motivic overlapping symbolized communal grief and healing, this final one broke this sense of community entirely. *Innocence* thus constructs trauma and memory as a continual process of negotiation between self and other, past and present, and memory and forgetting. Through its use of motivic circulation and transformation, the opera articulates the impossibility of fully separating the innocent from the guilty and the individual from the whole.

Methodologically, these analyses also test and refine the six-step framework developed in this dissertation. Applying it across three distinct moments (each with its own dramaturgical logic) has shown how the framework can reveal the structural and thematic dimensions of Saariaho's music. The combination of close analytical listening, dramaturgical contextualization, and interpretation provides a means of understanding how the music reflects the opera's emotional complexity.

The opera concludes with an implosion of the real world and the realm of memories. After Tereza (Markéta's mother) learns the identity of the family, she confronts Patricia (Tuomas and the shooter's mother). After a conflict between the two mothers, Stela (Tuomas's bride) learns about the family's secret. She insists that she chose Tuomas, not his family, and would

continue to love him despite this realization. Wracked with guilt, Tuomas ultimately reveals to the entire wedding party that he also helped to plan the shooting but dropped out at the last minute together with Iris, leaving only the perpetrator to be the sole criminal. He confesses that he loved his older brother and still does and therefore feels responsible for the events that transpired that day. Unable to separate himself from his past, he leaves Stela. In the last scene in the opera, a bloodied Markéta sings a final farewell to her mother, begging her to move on and let her go.

In the end, *Innocence* offers no resolution, only the uneasy coexistence of several truths at once. But it is precisely this tension that lends the opera its powerful musical and dramaturgical force. Its multitude of memories, represented through character motifs and their interactions with others, demonstrates that remembrance also asks us to confront the limits of empathy and understanding.

The analytical work on Step 5 that traced the ways motives interact with memory point towards larger questions about how the opera organizes meaning. The investigative work on steps 1-3 combined with the 3 case studies and their respective steps 4-5 demonstrate that these musical behaviors are participating in a broader contemporary debate about the representation of trauma, especially as it is represented in the postmodern experience. The following step 6, therefore, shifts from close reading to theoretical framing, exploring how *Innocence* resonates with and complicates key accounts of postmodernism.

Step 6 – Cultural Elaboration:

In this final step, I consider the musical and dramaturgical features discussed in the previous analyses within broader frameworks to understand this opera's place in 21st-century

narrative history. While it is tempting to label *Innocence* as a postmodern opera due to its non-linear structure and fragmented approach towards storytelling, I find that the work both participates in and rejects conventional postmodern definitions as described by authors such as Fredric Jameson and François Lyotard. In this step, I take these two scholars' definitions of postmodernism and test them against this opera. In doing so, I find that Lyotard's concept of "language games" and skepticism towards grand narratives provides a useful framework for understanding the opera's moral ambiguity.[82] However, Jameson's definition of postmodernism ("depthlessness," "affectless," pastiche, and "schizophrenic" temporalities)[83] acts more like a critical foil to the creative team's deliberately empathetic approach. Thus, I find that models of postmodernism alone are not sufficient to describe both this work's emotional weight and its ethical goals. To supplement these findings, I bring in trauma and memory theories, specifically those of Michael Rothberg and Cathy Caruth, to provide an expanded understanding of the opera's emotional logic. This synthesis of frameworks shows that *Innocence* engages in postmodernism through its moral ambiguity but does not make this vagueness sarcastic or surface-level. Rather, the opera uses these tools to bring the realities of survivors to the audience.

To begin with, Jean-François Lyotard's *The Postmodern Condition* (1979) offers a philosophical framework for approaching postmodernism. For Lyotard, "incredulity toward metanarratives," that is, a skepticism toward the grand narratives that dominate Western thought (such as progress, enlightenment, or destiny) is one of the key characteristics of the postmodern era. He posits that in the postmodern era, knowledge is accumulated through smaller "language

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[82] Lyotard, Jean-François. "The postmodern condition." *The postmodern turn: new perspectives on modern theory* (1994): 27-38.

[83] Jameson, Fredric. "Postmodernism, or the cultural logic of late capitalism." In *Postmodernism*, pp. 62-92. Routledge, 2016.

games," unique to each discipline, that each produce its own truths and forms of legitimacy.[84] Knowledge, then, becomes fragmented and plural and can no longer be grounded in a single, authoritative discourse.

So, what does that mean for the musical and dramaturgical world of *Innocence*? The work embodies this skepticism toward singular narratives rather clearly in its refusal to neatly delineate between those who are guilty and those who are innocent, effectively bringing Lyotard's ideas to a smaller scale. This incredulity, however, is particularly striking in the tradition of opera. Take, as a counterexample for the narrative modelling of *Innocence*, some of the canonic operas of the past, such as Mozart's *Don Giovanni*. In this work, the protagonist's moral corruption is unambiguous from beginning to end. His damnation at the end of the story reinforces a clear moral narrative where sin is met with divine punishment, which in turn creates a sense of catharsis for the audience members who likely also condemn Don Giovanni's actions.

Innocence, however, resists this dogma. Instead, it presents moral ambiguity through its web of complicity that surrounds the violent act. While some characters are directly responsible for the atrocities of the shooting (the shooter, Iris, Tuomas), others are implicated by proxy, such as Henrik by providing his son with a gun, or Lilly and Markéta through tormenting the perpetrator. Even ostensibly innocent characters are connected to the crime through their silence, whether that's Alexia and Anton who witnessed the bullying and did not stop it, or the Priest and Cecilia for noticing that something was "off" about the perpetrator but not investigating further. That's not to say that these characters "deserved" what happened, but rather that violent crime is often a Rube Golberg-like machine of complicity. The audience, then, is left not with a moral verdict, but with a multitude of perspectives, each true in their own ways.

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[84] Lyotard, "The Postmodern Condition"

Borrowing from Wittgenstein, Lyotard defines "language games" as discrete systems of meaning, each governed by its own rules and criteria for legitimacy. *Innocence* reflects these games through its multilingual libretto.[85] By staging nine different languages, the opera presents a world in which speech itself is characterized through differences. Though English serves as the *lingua franca* for this opera, the actors in the realm of memories rarely invoke this, save for climactic moments, such as in Case Study 2. Usually, English is reserved for the characters at the wedding to converse and understand one another, which makes the rare moments when the victims speak in English (or when the chorus translates their text into English) much more impactful. Within the realm of memories, characters communicate using their own languages to the audience, rendering them unable to truly understand one another. Even with the English translation of the libretto projected on-stage, comprehension is still uneven. Some languages translate readily into English (such as German), whereas others require abstractions to be understood (such as Greek). However, the opera seems to embrace this linguistic dissonance, allowing these languages to occur side-by-side, which emphasizes the disjunct nature of trauma itself.

In this sense, *Innocence* can be heard as a postmodern work as it relates to Lyotard's skepticism towards grand narratives and his language games. It refuses the authority of a moral narrative where crime is met with justice and instead embraces the ambiguity of crime as it often occurs in real life. Linguistically, the opera also embraces the potential of multiplicity, allowing meaning to arise through disjunct comprehension and a multitude of voices that cannot (and perhaps should not) be fully translated.

[85] Lyotard, "The Postmodern Condition"

However, that is not to say that *Innocence* can be neatly categorized as a postmodern opera. I turn now to Frederic Jameson's conception of postmodernism, as expressed in his work "Postmodernism, or the cultural logic of late capitalism." Here, Jameson describes postmodernism through pastiche, loss of historical depth, "schizophrenic" temporality, and a detachment from affect. In this view, the postmodern world is one characterized by surface-level understandings, sarcasm/parody, and the ubiquity of late capitalism. Postmodern art, then, is defined by temporal fragmentation and disjunction, as well as a coldness that refuses to engage with emotional affect. As an example of these qualities, Jameson refers to Philip Glass's *Einstein on the Beach* (1976), whose minimalistic looping harmonic patterns suspend narrative progression in favor of the surface. [86]

Innocence can be understood as an operatic manifestation of some, but not all, of these dynamics. Crucially, though, the characteristics of Jameson's postmodernism that the opera rejects are precisely where it gains its dramaturgical edge and impact. However, to begin with the ways in which the work accords with Jameson, *Innocence*'s multilingual libretto, fractured chronology, and refusal to assign blame demonstrate the kind of temporality that Jameson associates with the postmodern. This is reflected even at the level of physical staging. The opera occurs on a rotating cube that mixes environments from the school and rooms at the reception hall, shown below in Example 17. This allows for the juxtaposition of past and present, most strikingly evident when the bloodied memories of students rush past servers at the wedding reception in Act 3. In such moments, temporal boundaries dissolve entirely.

[86] Jameson, "Postmodernism, or the cultural logic of late capitalism"



Ex. 17: A screenshot from the 2021 premiere of *Innocence*, showing the rotating cube with distinct (and sometimes overlapping) settings. The top layer of the cube shows the school 10 years ago: a classroom (top left) and a hallway (top center/right). The bottom layer is used to depict areas at the wedding but often overlaps with memories from 10 years prior. The bottom center shows the kitchen at the wedding reception, where a bloody specter of Jerónimo from 10 years ago tries desperately to wash himself clean. The bottom right shows a utility closet used at both the school and the wedding, where Lilly hides.[87]

However, unlike the affectless repetition of *Einstein on the Beach*, *Innocence* completely rejects emotional detachment. Pastiche is virtually absent; the creative team avoids quotation and irony. Rather, the music and the narrative take place in the present, only reaching as far back as the early 2010's when the fictional tragedy took place. The opera, too, presents an incredible emotional depth that disqualifies it from portraying detachment from affect. Through witnessing the multilayered worlds of the various characters in the present and the realm of memories, the audience is asked to sympathize with those who have both suffered and inflicted suffering. They may feel sympathy for Markéta when she expresses her difficult home life but may also condemn

[87] Saariaho, *Innocence*, video, YouTube

her role in the bullying of the perpetrator. The same could be said for characters like Lilly, who undoubtedly tormented the shooter, but also suffered a great deal in the aftermath of the tragedy.

Almost every character is presented as emotionally multifaceted and complex, engaging the audience in a deeply emotional way. There is nothing sarcastic or jaded about how the creative team portrays the violence and the aftermath of this shooting. Depth is not at all sacrificed in favor of the surface as Jameson commented on in Glass's work. In fact, *Innocence* does quite the opposite. Its surface-level music acts in favor of soliciting empathy for all survivors as observed in Steps 5 for the three Case Studies. In this way, *Innocence* engages with Jameson's postmodernity through the use of temporal fragmentation but resists his cold detachment and surface-level exploration.

While these theories provide a useful framework for understanding how *Innocence* engages with certain aspects of postmodernism while rejecting others, it does not fully account for the totality of the opera's central themes. To supplement these readings, I turn now to Michael Rothberg's theory of memory, drawing on his work "Multidirectional Memory: Remembering the Holocaust in the Age of Decolonization" (2009). Here, Rothberg understands the multitude of memories and histories as complementary forces rather than divisive ones.[88] Although his analysis does not explicitly engage with music, his framework offers a convincing lens through which to understand how *Innocence* embeds its ethical concerns into a musical production.

In his work, Rothberg argues that memory is multidirectional, not competitive. Rather than viewing remembrance as a zero-sum field in which one history displaces another (referred to as "competitive memory"), he understands memory as a process wherein remembrance of one

[88] Rothberg, Michael. *Multidirectional memory*. No. 119. Fondation Auschwitz et de la mémoire d'Auschwitz ASBL, 2014.

trauma illuminates and empowers the remembrance of others. In models of competitive memory, there is an assumption that public attention to one event (for example, the Holocaust) diminishes attention to others (such as colonial violence). Rothberg's model corrects this, suggesting that collective remembrance can foster new forms of multidirectional understanding.[89]

Innocence, once again, portrays this idea on a micro-level. Rather than a central narrative that presents a singular history of the tragedy that dominates, the opera presents fragments of the crime through individual memories that combine, contradict, and occasionally reinforce one another. Examples include: the bullying of the perpetrator, the violent fantasies he shared with Iris, Markéta's loneliness and desire to belong, Tuomas's idealization of his older brother, and others. Each character, whether in the present or in the realm of memories, is given the space to present their version of history. Some of these memories place/displace culpability, such as Lilly's insistence that her bullying bore no consequences, while others place blame on themselves, like Cecilia and the priest, who both blame themselves for failing to act on the perpetrator's concerning behaviors. Within Rothberg's framework, these are not simply conflicting recollections but interacting ones; memories that define themselves through relation and tension. In *Innocence*, every character maintains a personal account of the tragedy and its precursors, none achieving closure on what "really" happened. The motives I've discussed in the analytic steps, which interact or even give way to one another, illustrate these conflicting, interactive memories.

For the audience, this multitude of perspectives asks them to hold several truths at once without collapsing them into a single narrative. They are confronted with a complex web of actions and inactions, where guilt and complicity are dispersed across many characters.

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[89] Rothberg. *Multidirectional memory*.

Saariaho's assertion that "everyone at least feels guilt" applies here: Patricia (the shooter's mother) regrets giving birth to "a monster," Henrik (his father) feels guilt for teaching him how to shoot, Tuomas expresses guilt through planning the crime and not taking action to stop it, the Priest regrets his inaction. In the realm of memories, characters who do not express guilt—Lilly, Markéta, Jerónimo, and Iris—remain ethically implicated through their contribution to the shooter's motivations. Even neutral observers, like Anton and Alexia, can be understood as sharing a residual responsibility in not interfering with the bullying. By presenting all these perspectives, the opera refuses closure in the characters' own memories while allowing the audience to synthesize the totality of the event.

While Rothberg's framework contextualizes *Innocence* as a dialogue of multidirectional memories that reinforce or contradict one another, this reading of *Innocence* can be further bolstered by bringing in trauma theory, specifically the work of Cathy Caruth. This will allow us to further understand the affective and temporal ways that these memories are processed, both by the characters and the audience. Cathy Caruth, in her work "Unclaimed Experience: Trauma, Narrative, and History" (1996), argues that trauma is defined not merely by the extremity of an event but by its resistance to direct assimilation into consciousness. According to her, this experience is not fully known at the time of its occurrence and returns belatedly through flashbacks, repetitions, and disjunctions. This delayed temporality mirrors the non-linear storytelling that postmodernists like Jameson describe, but, crucially, Caruth understands these not because of the ubiquity of post-capitalism, but as the ways through which trauma itself becomes known.[90]

[90] Caruth, Cathy. *Unclaimed experience: Trauma, narrative, and history*. JHU press, 2016.

Fascinatingly enough, when viewed in this lens, *Innocence* can be read as transferring the site of trauma from the characters to the audience itself. To elaborate on this, consider how the survivors in the realm of memories register the impact of the shooting rather immediately. None of the characters experience delayed or fractured realizations as described by Caruth. Instead, they understand rather immediately the gravity of the event. The delayed onset of the trauma, then, is placed onto the listeners. The creative team structures the narrative and the music so that the audience encounters the events through fragments, recollections, and contradictory testimonies, much like how a survivor would come to understand the true nature of the trauma they experienced. This places the audience in somewhat of a mimetic relationship with the survivor experience. While calling it a displacement of trauma may be a bit of a stretch (since the audience is not themselves being traumatized by the opera), the audience must reconstruct the "truth" of the event from its scattered remains. This creates a form of epistemological disorientation that can be seen as mirroring the belated understanding of trauma.

Viewers first encounter the aftermath of the attack in the prelude of the opera, as characters recount their lives after the tragedy. At that time, the nature of the atrocity is unclear to the audience. They simply understand that something horrific has occurred. Only gradually, as recollections and testimonies are presented, does the full picture of the shooting emerge. The opera therefore presents Caruth's understanding of the temporal disjunction of trauma as an actively unfolding, piece-by-piece, and belated revelation.[91] The shock of full understanding, of how deeply each character is implicated and involved in the crime, arrives, at times, through climactic confession, and at other times through slow exposure.

[91] Caruth, *Unclaimed experience.*

It is here that the distinction between postmodern aesthetic fragmentation and traumatic structural fragmentation becomes vital. A Jamesonian reading of *Innocence* might view that disjunctive chronology as a symptom of postmodern depthlessness or pastiche. However, such a reading would completely overshadow the ethical goals of the creative team in portraying the complex world of survival. Thus, in *Innocence*, fragmentation of the opera's story is crucial to creating this musical mimesis of trauma's belated structure.

By framing the work through Caruth's trauma theory as opposed to Jameson's purely postmodern perspective, we can see how the gaps and displacements in the music are not portraying a loss of depth, but rather an emotional depth that can only be accessed through indirect means. Musically, Saariaho reinforces this temporality through repetition and transformation. Associative motifs, like Anton's drums or Markéta's *kulning* calls, recur across time and contexts. The same gestures that are used to represent communal grief and healing can be twisted and contorted to represent division and fracture. With each layer of understanding revealed through the opera, these motifs gain nuances, never identical but always marked by their earlier trauma. This better suits Caruth's notion of the return of the event and how the past often resurfaces under different circumstances rather than Jameson's sarcastic and jaded perspective. Consequently, while the opera may adhere in parts to certain criteria of postmodernism, the lenses of memory and trauma help to understand why the creative team structured their music the way they did.

Conclusion

Across this chapter, I have examined *Innocence* from multiple angles, including its creation, its performers, its global context, its musical language, and its broader theoretical

implications. By doing this, I've shown how Saariaho and the creative team built an opera focused on memory, trauma, responsibility, secrets, and the complexity of survival. The three questions that guided my analyses in this chapter helped to uncover the layers of meaning in the music: how Saariaho defines the boundaries between individual and communal experience, how associative musical materials move across characters to depict trauma and memory, and how the music solicits empathy for the victims and survivors. Together, combined with the real-world investigation in steps 1-3, these insights form a more complete understanding of the opera's ethical and musical goals.

Step 1 centered on the creative team's early ideas and conception, demonstrating that the opera was understood as an exploration of diverging experiences born from a shared experience (her "Fresco" concept), then to an inquiry of trauma and its aftermath. Their emphasis on multiplicity of testimony and survivor perspective provided a framework for the musical and dramaturgical strategies that followed.

Step 2 turned to the performers and collaborators whose work shaped the opera's sound world. Interviews with Vilma Jää, Magdalena Kožená, Susanna Mälkki, and Simon Stone showed that *Innocence* developed through close collaboration between composer, performers, directors, and conductors. Through this step, we found that Jää's *kulning* became central to Markéta's musical identity, Kožená's Czech speech influenced the writing of Tereza, and both Mälkki and Stone highlighted the importance of character-specific musical signifiers. These accounts confirmed that the associated musical materials analyzed in the chapter were not derived from theoretical imagination but from the experience and interpretation of the musicians that worked with the creative team.

Step 3 then considered the external world in which the opera was conceived. It is no coincidence that *Innocence* tells the tale of a school shooting during an era of increased gun violence and heightened international discourse surrounding gun rights. It became pertinent, then, to understand the political climate in which the creative team was working. By analyzing two instances of gun-related public violence (the Charlie Hebdo attacks and the Sandy Hook School shooting) and the ways in which the crimes were reported in large media outlets, I uncovered a large part of the motivations behind the creative team's choice to spotlight survivors and the complex process of living with trauma. The over-emphasis on the spectacle of violence and morbid fascination with the psychology of perpetrators motivated the team to tell a story about the survivors of such violence and how their worlds become shattered through their survival.

Steps 4 and 5 examined the music itself through three case studies: Act 1, Scene 3 ("The Aftermath"), Act 3, Scene 13 (also titled "The Aftermath,"), and Act 4 Scene 19 ("Before the Shooting"). Together, these analyses examined how character identities and boundaries shift across the opera. Case Study 1 established how individual musical identities are introduced, and how they reveal a psychological connection between characters even when they are staged separately. Case Study 2 showed how these identities interact to form moments of communal expression and mourning. Case Study 3 reversed the findings of Case Study 2 by showing how these same materials can fracture and divide the group of survivors when placed under the weight of guilt and conflicting memories. These analyses showed that Saariaho uses motives in various and conflicting ways, going beyond simple character markers to reveal the deeply complex ways in which different people can experience the same thing, but leave with vastly different impressions and memories of the event.

Step 6 considered these findings within a broader modern discourse. Concepts from postmodernism (as defined by Jameson and Lyotard) helped to explain how the opera might occasionally adhere to these postmodern definitions through fractured timelines and resistance to singular narratives. However, I find that postmodernism alone is insufficient to describe how this opera is participating in broader historical narratives. Thus, I brought in memory theory and trauma theory. Rothberg's multidirectional memory supplemented these findings by providing a framework to understand the opera's handling of overlapping and interacting victim testimony. Caruth's trauma theory further clarified how the opera's structure and music echo the fragmented and delayed nature of traumatic understanding, creating a musical mimesis of trauma's belated structure. These concepts reinforced the idea that the opera's music reflects its larger dramaturgical commitment to presenting memory as layered, unstable, and relational, taking the narrative beyond simply a survivor's story into a messy and complex web of multitudes.

In summary, these six steps present *Innocence* as a work that treats memory as something shaped by perspective and interaction. The collaborations that informed the score, the associative motifs that both unify and fragment, and the opera's disjunct approach to its narrative all work towards the same goal of presenting a morally complex picture of how people remember, interpret, and live with the aftermath of violence. In this vein, the opera resists a singular and totalizing conclusion, instead placing multiple experiences side-by-side, asking the audience to embrace the tensions and discord as part of the ultimate "truth" of the story.

Innocence uses musical tools to navigate the challenges of representing collective trauma. Its sound world is built to highlight the imperfect boundaries between the individual and the collective, as well as innocence and guilt, and in doing so, it paints an emotionally responsive narrative where survivor's memories cannot integrate smoothly, instead competing with and

interrupting one another. This chapter has therefore argued that this work creates a musical space where individual and communal experience remain in constant dialogue, and where empathy arises through the complex confrontation of testimony and truth.

CHAPTER 3

TONIA KO'S *BREATH, CONTAINED*

Introduction:

This chapter features Tonia Ko's *Breath, Contained II* and *Breath, Contained III*. Born in Hong Kong and raised in the United States, Ko has established herself as an important voice among contemporary composers through a body of unique pieces that explore traditional instruments alongside found objects. Ko is the recipient of a 2018 Guggenheim Fellowship for music composition, as well as the recipient of numerous commissions and grants from organizations including the Koussevitzky Foundation at the Library of Congress, Fromm Music Foundation, Chamber Music America, the Barlow Foundation, and the American Academy of Arts and Letters. She has held prestigious residencies at MacDowell Colony, Copland House, Djerassi Resident Artist Program and the Atlantic Center for the Arts. In addition to these awards, she also served as the Composer-in-Residence for Young Concert Artists from 2015-2017, and her works have been championed by ensembles including Riot Ensemble, Spektral Quartet, Volti, New Morse Code, and the New York Youth Symphony.[92] Her *Breath, Contained* trilogy, composed and published between 2013 and 2024, is her first musical exploration with bubble wrap. Across the work's three entries, the series moves from solo improvisation to collaborative ensemble work, to a full orchestral concerto.

Ko's inclusion in my dissertation serves several purposes. First, it allows my six-step methodology to be tested on a composer whose creative archive is still unfolding. Unlike my previous chapter on Saariaho, whose career, works, and receptions are both well-documented and complete, Ko's work is still actively developing with new premieres and performances

[92] Tonia Ko, "Biography," Tonia Ko, accessed November 21, 2025 https://toniako.com/biography

continuing to shape the trajectory of her career. Similarly, Ko's work is part of a living practice where I get to directly interact with the composer via communication such as emails and interviews, allowing for methodological flexibility. As such, in addition to scores and recordings, this chapter draws on interviews, correspondence, public talks, and collaborative exchanges. These materials create points of dialogue that help me to better understand her works within the networks of people and tools that shape them. This approach reflects one of the central premises of this dissertation, that musical meaning, in part, is created through relationships between creators, performers, listeners, and materials.

This chapter follows my six-step method for her works *Breath, Contained II* (2017) and *Breath, Contained III* (2023). Step 1 examines Ko's compositional thinking through primary sources, including her own reflections and her correspondences with me. Step 2 expands my inquiry into those people involved in the performances of her works, including the Ars Nova Ensemble who recorded *Breath, Contained II*, and performers that premiered *Breath, Contained III*. Step 3 then places the work in dialogue with contemporary sociopolitical concerns, focusing on materiality as it relates to environmentalism, and how the work follows in a lineage of experimental feminist musical practices, particularly in how Ko's treatment of her instrument reflects a feminist ethics of care. Steps 4 and 5 turn to close musical analysis. I carry out these steps together for both *Breath, Contained II* and *III*, pulling from a variety of analytical techniques to explore how Ko structures her work and how her interests in materiality, subversion and playfulness are embedded in the music. The final step then reflects on how Ko's works participate in a musicological shift towards material relationism. Together, these steps help to understand these entries in the *Breath, Contained* trilogy as a contemporary reflection on how bodies, sounds, and materials can reshape musical form and interactions.

Step 1 – Primary Sources:

"Since 2013, I have been using air packaging as my creative playground for both sonic and visual realms. This overall ongoing project is entitled *Breath, Contained* as I attempt to release the 'voice' of this mundane object without popping (well, only on rare occasions…)"[93]

Step 1 of my method turns to primary sources such as interviews, documents, websites and correspondences to understand how Ko conceptualized and evolved her *Breath, Contained* trilogy. I draw specifically on her 2023 presentation at Cardiff University. In that presentation, Ko outlined five compositional "lessons" that inform her approach to bubble wrap: "1) let the physical material/mechanism speak, 2) subversive playing directions create new sounds; the physical gesture dictates the music, 3) harmony coexists (& thrives with!) 'noise'; filtering sounds rather than adding counterpoint, 4) giving space for collaboration, intuition, and crazy sounds, and 5) electronics are there to help you (how does one orchestrate the sensation of friction?)"[94] These lessons provide a throughline for understanding how her work evolved from a curious material interest to solo tactile exploration, to collaborative and playful experimentation, and finally to a traditional concerto with the aid of computer-assisted composition. In an exploration of these sources, we will find that Ko's compositional thinking is largely influenced by the transparency of bubble wrap, playfulness, subversion, and collaboration with others. Though I don't analyze *Breath, Contained I* in this chapter, I nonetheless consider it when tracking how Ko's interest in this material evolved over time. This first entry in this series can be neatly associated with her first two Cardiff lessons, highlighting the importance of materiality, physical gesture, and subversion. Though the entire trilogy foregrounds materiality, this first

[93] Tonia Ko, "Breath, Contained," *Tonia Ko Official Website*, accessed December 21, 2025, https://toniako.com/bubblewrap

[94] Tonia Ko, *Breath, Contained: Composition Lessons from Air Packaging*, slideshow presentation, Cardiff University, shared privately with the author, 2023

entry is where this first lesson can first be observed. Scored for solo improviser, electronics, and three sheets of bubble wrap, Ko abandons predetermined musical structures in *Breath, Contained I* in favor of freeform improvisatory exploration, guided by a simple set of written instructions. Sound is produced through rubbing, tapping and swiping to generate a palette of different sounds that are then heavily mediated by electronics.

This approach is not completely novel, but it is inspired by Ko's own approach to acoustic instruments. Reflecting on this process, she explains at the 2022 Composer's Conference at Cornell: "The mechanism that I delved into as I became more and more nerdy and research-oriented about this is friction. So, taking inspiration from other instruments that use friction, such as string instruments, when they play with their bow, it's the same idea of activating a sound."[95] Thus, despite the spotlighting of a found object as a solo instrument, one can see how Ko's thinking began with traditional acoustic instruments. In this way, *Breath, Contained I* establishes its relationship to material through the gestures that generate sound.

Ko's second lesson invokes subversion. As we will see in the analyses of *Breath, Contained II* and *III*, this lesson appears most immediately in both her deliberate refusal to pop the bubbles and in her subversion of formal expectations. In doing so, Ko either manipulates tension towards a teleological goal of popping the bubbles (as is the case for *Breath, Contained III*), or surprises the audience by rejecting formal symmetry (as is the case for *Breath, Contained II*). In both cases, Ko reorients attention towards the performer's gestures and the material. She explains her approach towards subversion as such: "The idea of subversion is a great part of what I do, because I don't pop. I think I'm subverting some kind of expectation, right? And the

[95] Composers Conference, "2022 Composers Conference – Conversations & Concert, Guest Composer Tonia Ko, July 29, 2022," *YouTube* video, 52:35, posted August 3, 2022

popping action is up and down, and the way I make friction is horizontal. So, there's something where this act of subversion is informing the musical gestures that I've come up with."[96]

What Ko is describing here is how subversion creates a particular mode of interaction with the object. Popping enacts a vertical action, much like how one traditionally plays the piano. But also, this action is terminal, as it destroys the bubbles. In contrast to this, frictional/horizontal engagement not only preserves the longevity of her instrument, but it also demands a horizontal orientation to the bubble wrap, swiping and rubbing across the material rather than poking or popping it from above. Subversion, then, connects elegantly with Ko's interest in materials. This subversive approach also extends to the large-scale structures of her work, where she refuses strict adherence to prescribed forms and instead creates novel conclusions that serve to further emphasize the role of bubble wrap in creating music.

Additionally, the intersection between visual and sonic arts was also crucial to her creative imagination during the conception of this series. Specifically, she became increasingly drawn to the concepts of transparency and material. She reflects:

> "…I was really into Agnes Martin, and her kind of, like, being so close to the material. When I see her paintings, it's like the canvas is very much a part of her work. So, anyway, I embarked on an independent study with Gregory Page…an art professor at Cornell, the next building over. And I took drawings to him every couple of weeks, and we would have discussions about my drawings but also the overlaps between music and visual arts. Because, they use the same terms, like 'rhythm,' and 'texture,' which mean completely different things. One day I said to him 'I really love transparent music. When the texture is really transparent, you can really hear everything that's going on, even if it might be very complex.' And he said 'well, that's a good idea, to draw on transparent objects.' Which brought me to bubble wrap."[97]

Ko's visual experiments with bubble wrap already demonstrate the same logic of subversion that later defines *Breath, Contained*. She says:

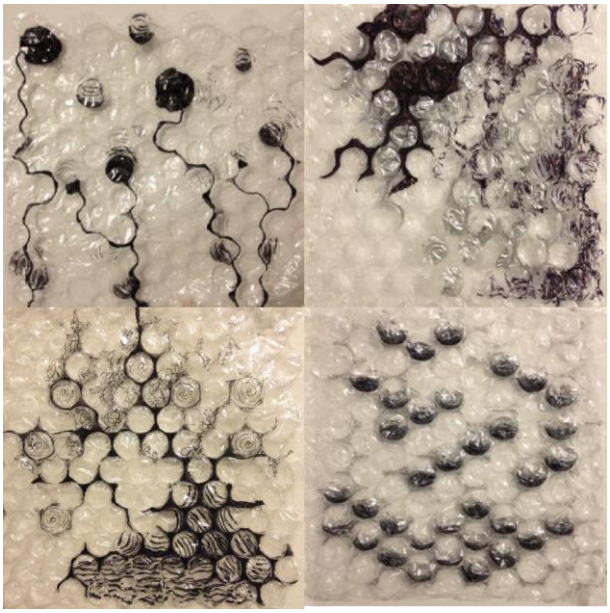
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[96] Composers Conference, "2022 Composers Conference"

[97] Tonia Ko, interview by the author, Zoom interview, February 2, 2024. See Appendix A for full interview

> "And so it actually started out as a canvas where I would paint. I limited myself to painting only on the bubbles or off the bubbles. So, I'm not trying to paint a particular picture on the surface. I'm trying to use the surface to figure out what kind of art I can make. And, so, similarly, for the musical aspects, I don't pop. I play on the bubbles, and sometimes between them, actually, but I use it as a friction instrument."[98]

One outcome of Ko's visual practice was a series of works titled *PACKED* made with black or white ink applied directly onto sheets of bubble wrap. In addition to using the bubbles as vehicles to hold and/or release ink, she explored other ways of combining opaqueness with transparency to emphasize the material and form of the bubble wrap. In some works, the bubbles contain the ink, emphasizing the bubbles' roles as vessels. In others, the bubbles contain only air, and the ink flows around them, highlighting the tension between opacity and transparency, represented as trapped air. Her work is shown in Example 18 below.



Ex. 18: Four screenshots of Ko's work *PACKED* for bubble wrap and ink[99]

[98] Composers Conference, "2022 Composers Conference"

[99] Tonia Ko, *Packed*, 2013, ink and bubble wrap installation. Screenshot from Tonia Ko, "Breath, Contained," Tonia Ko, accessed October 12, 2025, https://toniako.com/bubblewrap

This then brings the work to its musical iteration. The change from visual experimentation to musical composition occurred under rather practical circumstances. In an interview I conducted with Ko, she explains:

> "So, I had this big roll of bubble wrap from painting on it, and then I was taking Computer Music, where there was a final project for live processing. That's where *Breath, Contained I* and *II* come from, just like, working with Max MSP. And so, yeah, it was a class full of computers, and Cornell's department is very small, so I was like 'yeah, I'm not going to do piano. Everyone's going to write for piano.' That's how I got to bubble wrap."[100]

This change from her final project to her first published work in the trilogy perhaps reflects her aesthetic priorities. The improvisatory nature of *Breath, Contained I* allowed Ko to directly experiment and respond in real time to her object, and it helped to form a direct relationship between performer and instrument. This format also allowed her to focus closely on the physical behavior of bubble wrap without interference from additional performers or instruments. *Breath, Contained I* thus allows for experimentation with the tactile logic of the material before expanding it into more complex musical arrangements.

Moving onto the next entry in her series*, Breath, Contained II* expands Ko's engagement with bubble wrap from a solo improvisation to a 5-person bubble wrap group performance, connecting with her next two Cardiff compositional lessons: "3) harmony coexists (& thrives with!) 'noise'; filtering sounds rather than adding counterpoint," and "4) giving space for collaboration, intuition, and crazy sounds."[101] Through this group performance, the exploration of noise and materiality persists, presented as a playful dialogue between performers.

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[100] Ko, interview by the author, February 2, 2024

[101] Ko, *Breath, Contained: composition lessons from air packaging*,

Ko first published *Breath, Contained II* in her 2017 dissertation, where it appears alongside a scholarly article on Judy Dunaway's balloon improvisations.[102] Ko names Dunaway as a key inspiration for her works in interviews and in her Cardiff presentation, and in doing so, Ko places her work within a long-standing experimental tradition of found-object performance. As she explains:

> "Since there's no existing repertoire for bubble wrap and it's very difficult to play precise rhythms, I've looked more towards the experimental tradition, where it's very common for free improvisers to just use found objects, and some improvisers don't necessarily specialize in a particular instrument. They might just use electronics and a smattering of various household objects to play music…And I actually wrote one of my doctoral dissertation articles about an artist…Judy Dunaway, who has been playing balloons since the 80s."[103]

Dunaway's work provides a model for approaching noise as a musical force that can structure works, as opposed to an undesirable feature to be eliminated or avoided. I will discuss Ko's engagement with Dunaway's work more in depth in Step 3, where I explore the sociopolitical dimensions of this trilogy and how Ko's treatment of bubble wrap reflects and extends a long lineage of feminist experimentalist practice. However, here, a brief inquiry into how Ko draws on Dunaway is useful for understanding how the work was conceived.

To ground Dunaway's work in theory, Ko begins her discussion with Andy Keep and his work on found objects and alternative instruments, adopting his concept of "instrumentalization" to understand how Dunaway instrumentalizes her balloons. Dunaway rejects total sonic control of her instrument and instead incorporates the unpredictable qualities of the rubber into her works, treating the balloon as a responsive, body-like object with its own musical influence. From this discussion, Ko concludes that "it is the tactile experience of balloons that contains the

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[102] Tonia Ko, *A Portfolio of Two Essays* (DMA diss., Cornell University, 2017), 42
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[103] Composers Conference, "2022 Composers Conference" 15:41

greatest variety of artistic manipulations and gives rise to its musical potential."[104] Thus, physical contact becomes the primary mode of both playing and listening, spotlighting the material and any resistance it provides as a source of creativity.

This understanding directly correlates to Ko's third compositional lesson about harmony and noise. In *Breath, Contained II*, this coexistence occurs through touch. Even with a lexicon of techniques to play the bubble wrap, there will always be an audible fingerprint of the instrument's materiality embedded within the sound. In the case of bubble wrap, this fingerprint takes the form of the squeaks and rustles of plastic. Ko embraces this timbral quality, amplifying it with electronics and allowing her performances to be actively shaped by these sounds. This aligns with Ko's earlier interest in transparency and how transparent music allows one to hear every sonic detail, no matter how complex. Bubble wrap, in this sense, is not only visually transparent, but audibly transparent as well. Touch allows this transparency to be heard.

Around the same time as Ko's dissertation, she began extending her experiments with bubble wrap outwards into a variety of projects including sound art installations and other interdisciplinary performances. This reflects her fourth compositional lesson, which emphasizes giving space for collaboration as a site for intuition, experimentation, and what she describes as "crazy sounds." One such collaboration is titled *Up High*, created with clarinetist Zachary Good. In this work, Ko and Good perform on the ninth-floor penthouse of the Logan Center for the Arts in Hyde Park. As Ko states it on her website: "The two perform on top of large, isolated pedestals wearing bubble wrap jackets custom-made by Lia Kohl, juxtaposing the insecurity of height with the 'protection' of air packaging."[105] Here, bubble wrap moves beyond its original

[104] Ko, *A Portfolio of Two Essays*, 47

[105] Ko, "Breath, Contained," *Tonia Ko official website*

role as a sound-producing object to become an essential visual metaphor for vulnerability, a transformation made possible only through collaboration with other artists. The visibility of the performers' bodies, their precarious positioning, and the ostensibly protective material becomes integral to the work's meaning, demonstrating how Ko's approach to bubble wrap adapts to collaborative and interdisciplinary efforts with other creators.

Therefore, collaborative projects such as *Up High* extend Ko's bubble wrap practice into new domains that allow her to reshape her approach towards bubble wrap. She was already interested in these interdisciplinary practices when conceptualizing the first work in this trilogy, and these collaborations allow her to test her interests in transparency with other artists. Thus, these group efforts function as additional experimental avenues for Ko alongside her publications in the trilogy, sharpening her approach to materiality while expanding her creative domains.

Lastly, in addition to touch, noise and collaboration, playfulness is a central element to Ko's compositions. Though she does not name this explicitly within her Cardiff lessons, it nonetheless appears as a recurring approach to her writing and performances with bubble wrap. She iterates the importance of this below:

> "At first I was just like, 'oh, [bubble wrap]'s squeaky.' And that was sort of the fun part about it. I still think it's a fun thing to do, and I think that bubble wrap, when I want to tell people that I play bubble wrap, it does bring joy, you know, it brings a smile to people's faces. I'm not thinking it's like, 100% serious and that I don't want anyone to have fun."[106]

Ko uses playfulness to challenge how performers and listeners engage with the work. Bubble wrap typically carries strong cultural associations with humor, novelty, and disposability, primarily through its cultural association as either a toy or one-use packaging. She maintains a lighthearted, playful attitude towards her instrument, but not in a way that destroys the material

[106] Composers Conference, "2022 Composers Conference" 15:41

or reinforces its disposability. This will be further elaborated on in step 3, but the point nonetheless remains that Ko encourages playfulness in her works in a subversive way, tying in her ideas from her second compositional lesson. Together, these concerns regarding noise and collaborative openness help to understand *Breath, Contained II* as an open-ended musical practice that extends Ko's initial interests in material and subversion.

Breath, Contained III is the final entry in the trilogy, and a noteworthy departure from previous works. The piece exists in two versions: a chamber orchestra version commissioned by the Koussevitsky Foundation in 2023, and a large symphony orchestra version commissioned by the Philharmonie Luxembourg in 2024.[107] The work, therefore, is shaped by the conditions of the commissions she received, though she likely also drew on her old grad school project, bringing this trilogy full-circle back to her origins with bubble wrap.

This work uses computer assistance to aid in composition, and, subsequently, this is a place where we see her fifth compositional lesson in practice: "Electronics are there to help you (how does one orchestrate the sensation of friction?)"[108]. While electronics are present in the earlier works of the trilogy, they functioned primarily as an additional instrument in the ensemble, amplifying and magnifying the sounds of her bubble wrap. Here, in *Breath, Contained III*, Ko uses computer-assisted composition to help her translate the gestures and sounds of her plastic into playing techniques for other instrumentalists.

To address the parenthetical question in her lesson, Ko created a database of bubble wrap sounds in the program ORCHIDÉE (sometimes spelled as *Orchidea*), an orchestration program developed at IRCAM that works in tandem with programs like MaxMSP. ORCHIDÉE operates

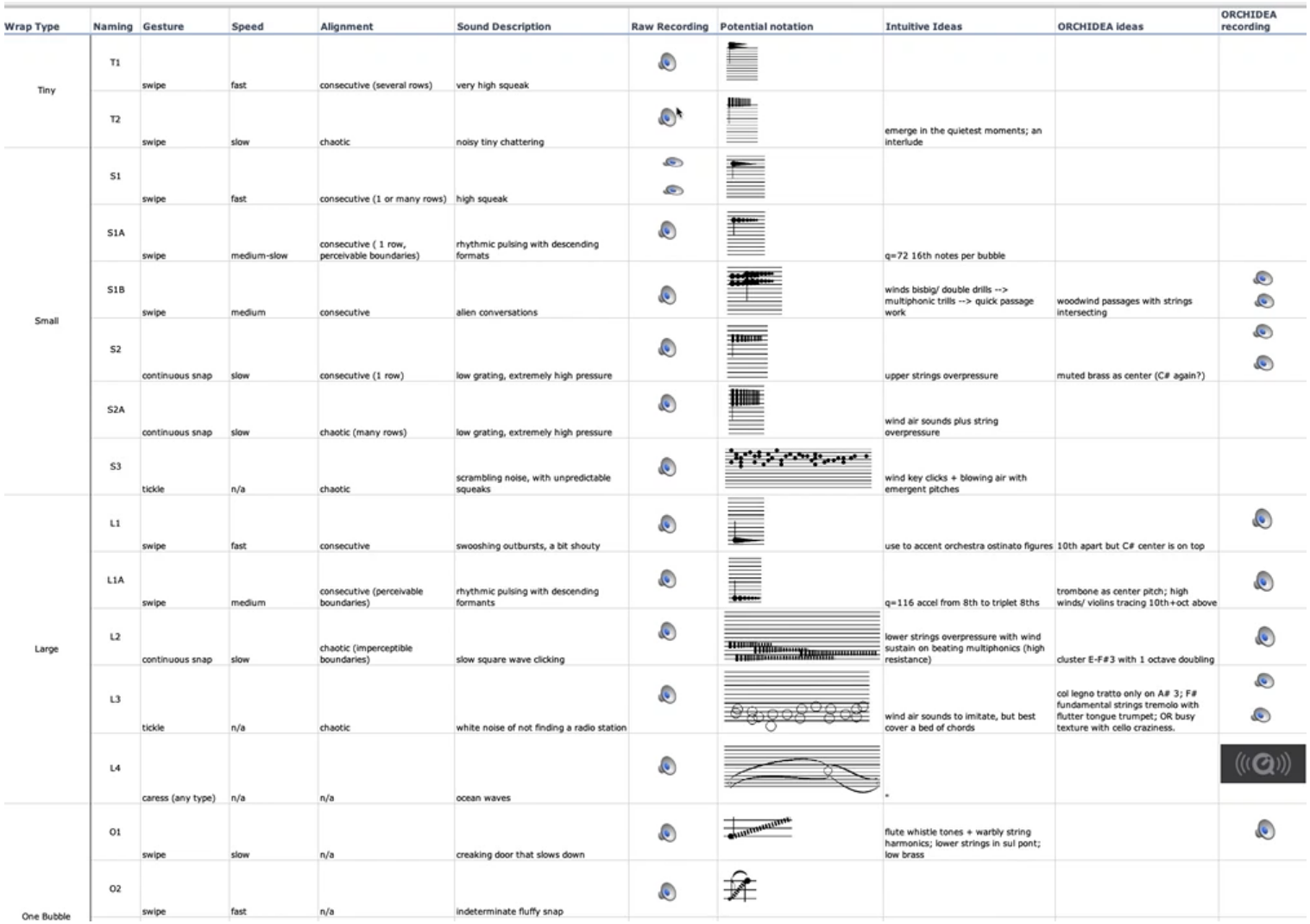
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[107] Composers Conference, "2022 Composers Conference"

[108] Ko, *Breath, Contained: composition lessons from air packaging*, slide 28

by analyzing a target sound and searching a large database of instrumental samples for combinations that perceptually approximate its spectral features. The technicalities for how it achieves this feat are beyond the scope of this chapter, but ORCHIDÉE remains, nonetheless, central to the conception of this work. The program offers a field of options that the composer can then evaluate, adapt, and refine for their accompaniment. Example 19 shows Ko's database of bubble wrap sounds including descriptions of the gesture required to make the sound, potential notations for the sounds, her intuitive ideas for how to orchestrate the sound, and ORCHIDÉE's suggestions for potential instrumental gestures that perceptually match the original bubble wrap sound. Most notably, ORCHIDÉE does not match every bubble wrap sound to a potential instrumental gesture, leaving Ko room to interpret and set the sounds herself. These bubble wrap-adjacent sounds will be encountered and discussed in Step 4 of Breath, Contained III, where I find that the levels of timbral alignment between the orchestra and the bubble wrap are manipulated to create moments of tension and release.

Fascinatingly, Ko's "intuitive ideas" in the table don't always align with ORCHIDÉE's suggestions--an expected outcome given that many standard orchestral instruments lack the squeaky, membranous and plastic qualities of bubble wrap. Therefore, it's important to note that ORCHIDÉE does not automate the compositional process, nor does it erase opportunities for compositional intuition to arise. Rather, it provides Ko with suggestions as to how to mediate and translate the material expressions of her bubble wrap. Thus, the resulting orchestration for *Breath, Contained III* utilizes extended techniques, gestures, and timbral behaviors within the orchestra to sonically merge her previous explorations with bubble wrap with traditional instrumentation.



Wrap Type	Naming	Gesture	Speed	Alignment	Sound Description	Raw Recording	Potential notation	Intuitive Ideas	ORCHIDEA ideas	ORCHIDEA recording
Tiny	T1	swipe	fast	consecutive (several rows)	very high squeak					
	T2	swipe	slow	chaotic	noisy tiny chattering			emerge in the quietest moments; an interlude		
Small	S1	swipe	fast	consecutive (1 or many rows)	high squeak					
	S1A	swipe	medium-slow	consecutive (1 row, perceivable boundaries)	rhythmic pulsing with descending formats			q=72 16th notes per bubble		
	S1B	swipe	medium	consecutive	alien conversations			winds bisbig/ double drills --> multiphonic trills --> quick passage work	woodwind passages with strings intersecting	
	S2	continuous snap	slow	consecutive (1 row)	low grating, extremely high pressure			upper strings overpressure	muted brass as center (C# again?)	
	S2A	continuous snap	slow	chaotic (many rows)	low grating, extremely high pressure			wind air sounds plus string overpressure		
	S3	tickle	n/a	chaotic	scrambling noise, with unpredictable squeaks			wind key clicks + blowing air with emergent pitches		
Large	L1	swipe	fast	consecutive	swooshing outbursts, a bit shouty			use to accent orchestra ostinato figures	10th apart but C# center is on top	
	L1A	swipe	medium	consecutive (perceivable boundaries)	rhythmic pulsing with descending formants			q=116 accel from 8th to triplet 8ths	trombone as center pitch; high winds/ violins tracing 10th+oct above	
	L2	continuous snap	slow	chaotic (imperceptible boundaries)	slow square wave clicking			lower strings overpressure with wind sustain on beating multiphonics (high resistance)	cluster E-F#3 with 1 octave doubling	
	L3	tickle	n/a	chaotic	white noise of not finding a radio station			wind air sounds to imitate, but best cover a bed of chords	col legno tratto only on A# 3; F# fundamental strings tremolo with flutter tongue trumpet; OR busy texture with cello craziness.	
	L4	caress (any type)	n/a	n/a	ocean waves			"		
One Bubble	O1	swipe	slow	n/a	creaking door that slows down			flute whistle tones + warbly string harmonics; lower strings in sul pont; low brass		
	O2	swipe	fast	n/a	indeterminate fluffy snap					

Ex. 19: Ko's Database of bubble wrap sounds and their ORCHIDÉE-suggested orchestrations[109]

[109] Tonia Ko, *DATABASE for Breath, Contained III* (Excel file, shared with author, November 19, 2023)

In this way, Ko extends her interests from the earlier works of the trilogy into an orchestral context, introducing computer-assisted composition as a new form of collaboration. Whereas *Breath, Contained I* and *II* center on direct physical engagement with bubble wrap through solo and collaborative performances, this third entry confronts the challenge of translating her friction-based sound world into a traditional concerto orchestration. Ko's use of electronics and ORCHIDÉE help to mediate this process. She embraces technology as a tool to aid composition but does not rely on it as a replacement for creativity.

Altogether, the *Breath, Contained* trilogy reveals Ko's compositional interests in touch, material agency, and interdisciplinary practices. This first step has turned to primary sources, using her own words to understand how these concerns came to be, and how she implemented them in her work. Her five compositional lessons from her Cardiff presentation provide a valuable framework for tracing this development across the trilogy. *Breath, Contained I* establishes her foundational commitment to her material and all its sonic qualities, letting friction and subversive physical gestures dictate the resultant sounds in her compositional palette. *Breath, Contained II* builds on these priorities by extending her solo explorations into a shared improvisatory practice, where collaboration and intuitive play become central compositional focuses. Finally, *Breath, Contained III* takes the form of a concerto, which allowed Ko to introduce computer-assisted composition as a means of mediating between the sounds of bubble wrap and the capacities of traditional instruments. This inquiry illuminated several interrelated themes, such as tactility (as previously described), visual-sonic imagination inspired by material transparency, playfulness as a compositional stance, collaboration as a generative force, and technology as assistance rather than automation. Together, these themes establish the conceptual framework for the political, analytical, and aesthetic discussions in subsequent steps.

Step 2 – Ethnographic Inquiry:

Step 2 extends my inquiry into the conception of the work into the realization of it by interviewing performers and collaborators who helped bring this series to life. The findings in this step are organized into distinct perspectives: discussions with members of the Ars Nova Ensemble who performed *Breath, Contained II* in 2021 and insights from pianist Milena Gligic who performed on piano during the premiere of *Breath, Contained III*, and a conversation with David Bloom, who conducted the same work. Through these discussions, I gain insight into the realization of the final score, including the kinds of work that performers did to navigate the novelty of the pieces.

To begin with, I reached out to the Ars Nova Ensemble whose 2021 performance and recording of *Breath, Contained II* (uploaded to YouTube under the *hertzbreakerz*'s channel) I use as a reference for my analysis of the work.[110] For this step, I sent the ensemble a list of questions related to the work, and members Jonatan Sersam and Agata Tuchołka provided responses. Through these responses, I find that the realization of *Breath, Contained II* is largely a feat of ensemble coordination, and that a successful performance of the work involves careful preparation of materials, musical techniques, and organization of leaders and followers within sections.

A recurring theme in the ensemble's experience was the lack of a standardized technique for bubble wrap. Tuchołka notes that because no member was a "master" of the instrument, the rehearsal processes began with group practice and learning.[111] Thus, the ensemble started from a

[110] Ars Nova Ensemble, "Tonia Ko – Breath, contained II," hertzbreakerz, May 15, 2020, video, 13:18, https://www.youtube.com/watch?v=gQESMHxmxrs&t=503s

[111] Jonatan Sersam and Agata Tuchołka, interview by author, March 21, 2026, email interview. See Appendix B for full transcript.

baseline of (in)experience. This process of learning, however, was further complicated by the difficulty in procuring the instrument. Sersam describes visiting six different locations in search of the specific plastic density Ko's score required. Ultimately, the ensemble had to work with the materials they had. Sersam further elaborated on the difficulty of setting up the microphones in such a way that they were sensitive enough to pick up on the subtle sounds, but not so sensitive that it created a feedback loop.[112] Though I don't discuss the role of the electronics heavily in this discussion, this nonetheless presents a practical barrier with which the ensemble contended, adding a technological variable to the balance between physical intensity and material limitations.

Additionally, Ko's score for *Breath, Contained II* primarily uses graphic notation and clock-based timekeeping. In the Ars Nova recording of the work, they do not adhere to Ko's timings strictly, often extending or shortening a passage by a significant amount. As Jonatan Sersam noted in his responses, the ensemble assigned different individuals to act as the "head" of specific sections, granting that person the authority to decide how to move forward and when to trigger transitions.[113] Furthermore, both responders noted how different early rehearsals were from later rehearsals. This "musicalizing" (as Sersam put it) involved heightened ensemble coordination, requiring the performers to coordinate grand gestures, transitions, and overall balance.[114]

The experiences shared by the Ars Nova Ensemble show how the realization of *Breath, Contained II* is largely a process of group problem-solving. While assigning leaders and

[112] Sersam and Tuchołka, interview

[113] Sersam and Tuchołka, interview

[114] Sersam and Tuchołka, interview

establishing group techniques are standard practices for any chamber group, these tasks take on a different angle due to the novelty of the instrument and the openness of the notation. Thus, from my interviews with the Ars Nova ensemble, I find that, above everything else, this work cannot be approached as five performers separately executing a score. Rather, the five performers work together in musical dialogue in real time to realize Ko's abstract expressions. I use this observation as an entryway for my analysis in Step 4, where I analyze how salient changes in ensemble gesture and coordination contribute in part to segmentation of the work into sections that create a quasi-palindromic form.

For my next stage of ethnographic inquiry, I reached out to Milena Gligic, who performed on piano for the premiere of Breath, Contained III. In her responses to my questions, she provided insights into the rehearsal process as well as the cognitive and technical demands of the part she performed. Because her role was exclusively at the piano (since Ko performed the solo bubble wrap for the premiere of this work), her experience offers a unique perspective on working with the composer in the rehearsal hall.

One thing Gligic noted in her responses was how "fun" it was to imitate the bubble popping noises in the first half of the work.[115] I explore these elements of material mimesis in my analysis of this work, but as briefly mentioned in Step 1 and here, one central concept of Ko's approach to composing *Breath, Contained III* involved technological mediation in creating timbral analogues to bubble wrap sounds on traditional instruments. Crucially, Gligic's attention to this detail reveals that she knew she was meant to imitate the popping noises. This further confirms how bubble wrap is the structural core of the series, influencing what is musically possible in the ensemble as this found object meets traditional orchestration.

[115] Milena Gligic, interview by author, March 21, 2026, email interview. See Appendix C for full transcript.

Gligic also highlights the cognitive load required to navigate the piano part.[116] As will be seen in Step 4, the piano's part is highly complex, both rhythmically and harmonically. The part frequently demands that the performer move rapidly between triple, quadruple, quintuple, and sextuple divisions of the beat fluidly. To survive these intense directions in the few rehearsals they had, Gligic relied on cues from the conductor and notes she wrote in her part.[117] While this is not unusual for a performance, Gligic's use of these practical tools to aid in her performance suggest that, while the notation is exacting, Ko's ultimate goal in her written parts is to create a general feeling of busy rhythmic and harmonic activity rather than mathematical precision. When asked, Gligic did not make any mention of Ko being particularly corrective of her performance, further emphasizing this point.[118]

Thus, Gligic's perspective illuminates some ways in which Ko combines her interests in bubble wrap with a traditional musical genre and ensemble. In specific, her points on how the instruments mimic the sound of bubble wrap and how she traversed through the virtuosity in the piano part proved the most useful for my analysis. These findings suggest ways in which this work asks the performers to integrate their sound within Ko's bubble wrap world.

The perspectives shared by the Ars Nova Ensemble and Milena Gligic provide essential insight into how Ko's compositional intentions were realized in the final sounding work. Their comments reveal the specific barriers to this realization, such as the group-learning processes required to master an unstandardized instrument and the need to imitate the sounds of plastic bubbles on traditional instruments. With these findings, I am able to refine my scope of questions

[116] Gligic, interview

[117] Gligic, interview

[118] Gligic, interview

leading into Step 4. However, before I continue to analysis, I turn now to the sociopolitical landscape of Ko's work.

Step 3 – Historical Context:

Step 3 focuses now on the sociopolitical conditions surrounding the creation of *Breath, Contained*. Unlike Saariaho's *Innocence*, which responds directly to a specific cultural event, Ko's trilogy does not present an overtly political narrative. This contrast, however, makes this work useful for testing how this step operates when a work does not foreground its stances through text or program. The premise for step three assumes that while a musical work can be understood in isolation, its meaning deepens when placed in relation to the cultural and historical environment in which it was made. This premise also rests on the understanding that no work is created in a vacuum. Every composer brings with them a set of experiences and values shaped by their time and place. Even when a piece avoids contemporary references, it still reflects the conditions under which it was produced. *Breath, Contained*, therefore, inevitably reflects the conditions of the late 2010's/early 2020's. Specifically, Ko's music presents a set of values that align with contemporary conversations surrounding relations between bodies and materials, as well as feminist ethics of care. This analysis will reveal how her trilogy is shaped by these contemporary concerns.

Step 3a: Environmental dimensions

These themes come into focus most clearly through Ko's choice of material. Focusing her trilogy on bubble wrap presents questions of care, consumption, and material relation through this object that carries a variety of cultural and environmental subtexts. Designed as a protective

packaging material in 1957[119], bubble wrap is most often encountered as a single-use plastic or, more playfully, a brief source of amusement--a material to be popped, discarded, and replaced. In both cases, the bubble wrap's life cycle is defined by extraction and immediacy. In 2019, the world discarded 353 million metric tons of plastic waste, 40% of which is attributed to packaging alone.[120] Though recycling centers exist for plastic packaging, only a fraction of plastic waste is recycled each year, with most entering landfills or incinerators.[121] Such single-use plastics have therefore become emblematic of unsustainable consumption and extractive relationships with material resources.

To further understand the significance of this material choice, it is also necessary to consider Ko's own relationship to plastic and disposability. Born in 1988 in Hong Kong and raised in Hawaii,[122] she lived in two environments especially shaped by the global flow of commodities and consumer waste. Globally, plastic production escalated dramatically over the second half of the 20th century, from just a few million metric tons annually in the early 1950s to over 160 million metric tons by the early 1990s.[123] In the Pacific region where she grew up, the environmental presence of plastic became especially tangible. Studies of the Great Pacific Garbage Patch, first documented in the late 1990s, show that plastic debris accumulates in ocean

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[119] Anatol Heib, *From wallpaper to packaging – bubble wrap turns 70*, accessed Jan 20, 2026, https://www.ige.ch/en/blog/blog-article/from-wallpaper-to-packaging-bubble-wrap-turns-70"

[120] Veronika Samborska, *Packaging is the Source of 40% of the planet's plastic waste*, accessed December 21, 2025, https://ourworldindata.org/data-insights/packaging-is-the-source-of-40-of-the-planets-plastic-waste

[121] Hannah Ritchie, Veronika Samborska, and Max Roser, *Plastic Pollution*, accessed December 21, 2025 https://ourworldindata.org/plastic-pollution

[122] Ko, *Biography*, Tonia Ko Official Website

[123] Samborska, *Packaging is the Source of 40% of the planet's plastic waste*

gyres connected to Hawaiian waters. By the early 2000s, plastics were washing up on beaches and entering marine ecosystems.[124]

These global and regional trends show how rapidly plastic became embedded in daily life well before Ko's adolescence. By the late 1990's and early 2000's, plastic had become ubiquitous. Consumer goods regularly arrived wrapped in layers of the material. Everything from electronics, toys and food were all enclosed in single-use materials, and a culture of disposability emerged, taking plastic for granted. Growing up in such contexts meant encountering packaging and disposability as ordinary elements of the world.

What does it mean, then, for a composer shaped by such cultures to build a long-term musical practice around an object designed to be used once and thrown away? Perhaps it implies a shift in attention from extraction to care and from consumption towards maintenance. Even when not framed as environmental activism, Ko's mode of working with bubble wrap asks both performers and audiences to reconsider how they view the material, and to stay with it and care for it, rather than exhaust and discard it. This care is reflected in her practice as well as her instructions to performers. In the footnotes of her program notes, Ko states "All packaging material used in my projects is scavenged or donated by the community, never newly purchased."[125] While this remark only appears briefly at the end of the program notes, it reveals an alignment with material concerns that is both practical and environmentally responsible. More importantly, it suggests a broader way of relating to plastic waste. For Ko, bubble wrap is more than a toy or a novel found object. It's a material whose physical behavior actively shapes

[124] The Ocean Cleanup, "The Great Pacific Garbage Patch," *The Ocean Cleanup*, accessed January 16, 2026, https://theoceancleanup.com/great-pacific-garbage-patch/

[125] Tonia Ko, *Breath, Contained III*, score, unpublished manuscript, commissioned by the Koussevitsky Foundation, 2023, PDF, provided by the composer

musical activity. This is especially clear in *Breath, Contained III*, where ORCHIDÉE is used to generate orchestral gestures that correspond to the sounds of bubble wrap, discussed previously in Step 1. The material properties of this object dictate many of the musical decisions Ko makes, transforming it from a passive, discarded byproduct of modern consumer culture into an active collaborator in the musical creation process. I consider this relationship in Step 4 when analyzing *Breath, Contained II* and *III,* showing how Ko treats the object and its material limitations as a source of creative inspiration.

This sense of material participation brings to mind Jane Bennett's 2010 work *Vibrant Matter*. In this book, Bennett argues for the recognition of nonhuman materials as "alive," enacting their own will in our world, rather than passive objects without agency. She draws on a lineage of philosophy including Spinoza, Deleuze, and even Foucault in discussing how objects can actively participate in human lives, drawing us in or speaking indirectly to us. She investigates this through the phenomenon of hoarding and how hoarders discuss the objects they collect, noting a consistent pattern of how things have the capacity to beckon us or to command that we take them with us.[126] For example, one can imagine how a stranger might be enchanted by the glimmer of a dime on the sidewalk, going so far as to stop along their path to bend over and pick it up. Despite the dime's low monetary value, the material property of the dime's metal created a shine that compelled the stranger to act upon it, thus making the dime an actant participant in the life of that stranger, even though it lacks the mechanical properties that would biologically classify it as "alive." In doing this, Bennett posits that everything is alive and interconnected, including rocks, objects, air, and even animal corpses. This challenges

[126] Jane Bennett*, Vibrant Matter: A Political Ecology of Things*, (Duke University Press, 2010)

anthropocentric norms by illuminating how ordinary objects exert their own agency through their material properties.

How might Ko's instrumentalization of bubble wrap reflect this actant quality? One potential answer lies in the way her compositional and performance practices allow the material to assert its own sonic properties rather than forcing it into a preexisting mold. Specifically, Ko activates the bubble wrap entirely with her hands, using friction-based gestures to elicit sound. She avoids using bows, mallets, or other conventional tools that might act as a mediator of this sound or force the object to behave in predictable ways. This allows the texture of the material to guide the sounds that occur. In other words, Ko quite literally allows the object to "speak," giving it a "voice" and allowing it to engage in a "dialogue" with her. Additionally, she uses electronics to help amplify and emphasize the bubble wrap's voice, insisting on its audibility.

Bennett asserts that an object does not require intentionality or consciousness to have agency, rather, it gains this quality through its capacity to affect and be affected.[127] Bubble wrap affects Ko and her music in two unique ways. The first is how the quality of its plastic affected Ko in her earlier years, drawing her in as a creative source to think critically about relationships between opaqueness and transparency, sound and silence, ink and space. The second is how bubble wrap affects Ko's music by determining what range of sounds are possible.

At the same time, the bubble wrap is also affected by Ko's touch, via rubbing, swiping, and tapping gestures that warp the plastic and transfer energy to both the plastic and the air within the bubbles. This, in turn, creates sounds that the performers hear and react to in live improvisation. Through this back-and-forth, a continuous feedback loop is formed, and the resultant composition arises through this dynamic interplay between performer and material.

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[127] Bennett, *Vibrant Matter*

Ko's music, then, offers a musical analogue to Bennett's idea of material agency by treating bubble wrap as an independent sounding body whose physical properties shape what is musically possible.

In this way, *Breath, Contained* participates in sociopolitical discourse through the values embedded in its compositional practice rather than its explicit messaging. Ko's sustained attention to bubble wrap develops against a culture where plastic has become both ubiquitous and symbolically loaded as an indicator of modern-day consumption, a material engineered for rapid circulation and disposal. By reimagining this material as something to be listened to, handled carefully, and elevated to the status of instrument, her music rejects these prevailing contemporary attitudes of extractive consumption.

Furthermore, *Breath, Contained* reflects broader concerns about environmentalism by modeling an alternative way of existing with things. Ko's music asks what possibilities arise when we slow down, listen, and stay with a material long enough for its possibilities to unfold. This idea positions her trilogy neatly within contemporary debates about sustainability and our responsibilities to the nonhuman world, even without directly stating it.

Step 3b: Feminist dimensions

The feminist dimensions of *Breath, Contained* similarly develop through Ko's relationship to materials, however, it takes on a new lens when considering Ko's inspirational lineage and how she transforms relationships between bodies and sound. The trilogy does not present a stated feminist narrative, but it is nonetheless situated within a history of feminist experimental music that Ko herself acknowledges and theorizes in her dissertation. As revealed in Step 1, Ko draws on the work of composer and performer Judy Dunaway, whose works for balloon foreground the female body and tactile sound production as both political and aesthetic

interventions. Ko positions Dunaway's practice within the feminist and cyberfeminist movements of the early 1990s, reading her balloon performances as examples of what Dunaway calls "body-centered politics," in which presentations of female sexuality become tools of resistance.[128]

This appears most evidently in Dunaway's playing techniques. One of her more recognizable playing techniques involves holding a large "tenor" balloon between her knees (much like a cello) and activating its skin through rubbing, stroking, and even pressing objects such as vibrators against its surface. These gestures deliberately invoked masturbatory imagery, staging female sexual autonomy during an era of political and moral panic over the female body in the United States. As examples of these concerns, the early 1990s saw a significant surge of feminist activity, including the beginnings of third-wave feminism with Anita Hill's 1991 testimony against Clarence Thomas, the formation of the Women's Action Coalition, and the rise of the "riot grrrl" movement. [129] These moments forced the public to confront questions of sexual agency, challenging traditions of how women could dress and act. Dunaway's balloon performances, then, can be seen as a musical representation of her rejection of these norms and her efforts to resist repression and reassert female sexual agency.

Ko's work inherits this tradition but also transforms it. Like Dunaway, Ko uses friction-based gestures and touch to activate a fragile, membranous object. Her hands rub, swipe, and press against the bubble wrap. Her body (and the bodies of other performers in the case of *Breath, Contained II*) is visibly involved in producing sound. Yet, Ko's performances are notably less provocative than Dunaway's. Rather than foregrounding erotic spectacle as Dunaway did,

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[128] Ko, *A Portfolio of Two Essays.*

[129] Laura Brunell, "third wave of feminism", *Encyclopedia Britannica*, accessed December 22, 2025 https://www.britannica.com/topic/third-wave-of-feminism

Ko's work emphasizes slowness, attentiveness and care. This difference reflects a transformation in the concerns of contemporary feminist politics. Dunaway's work in the 1990s responded to systems of sexual repression and control over women's bodies, whereas Ko's 2010's/2020's works speak within feminist discourses that have expanded outward to include care for resources, environments, and networks of dependencies shaped by late-capitalist consumerism.

Contemporary feminism (what some call "fourth wave") engages a wide range of issues including sexual violence/harassment, body shaming, rape culture, intersectionality, and the expanded inclusion of diverse gendered and racialized identities. This wave of feminist practice is understood to have begun in the early 2010s and to be characterized by its use of digital platforms and social media to spread awareness, share experiences, and coordinate collective action.[130]

Amongst these concepts, the "ethics of care" is particularly useful for understanding how Ko's work indirectly engages with this lineage of feminism. First coined in the 1980s by scholars Carol Gilligan and Nel Noddings, "care ethics" emphasizes the political significance of empathy and responsibility to others. This stance acts in opposition to abstract models of ethics and morals like Kantian deontology, utilitarianism, and justice theory, instead positing that the impulse to care for others is universal.[131] For Gilligan and Noddings, care is a political act in how it seeks to reject individualistic and systemic models of empathy, seeking to protect that which is fragile and reject systems that normalize expendability of bodies and resources.

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[130] Laura Brunell, "The fourth wave of feminism,' *Encyclopedia Britannica*, accessed December 23, 2025 https://www.britannica.com/topic/feminism/The-fourth-wave-of-feminism

[131] Brian K. Burton, "Ethics of care," *Encyclopedia Britannica*, accessed January 2, 2026, https://www.britannica.com/topic/ethics-of-care

These concerns come as no surprise, given how our world is increasingly shaped by globalized supply chains, petrochemical dependence, and accelerating ecological collapse. Contemporary feminist politics, then, act in part through practices that insist on sustained and responsible relationships to what is fragile and temporary. From this perspective, Ko's relationship to bubble wrap, a purely industrial material designed for momentary use and immediate disposal, takes on a distinctly feminist dimension, one that resists both the gendered and ecological logics of expendability that constitute much of modern-day life.

This emphasis on attentiveness and relationality also places Ko in dialogue with other feminist traditions in experimental music beyond Dunaway. Throughout the late twentieth century, composers and sound artists have challenged models of musical mastery and control by reframing listening as a practice rather than a passive process. One manifestation of this approach is found in the work of Pauline Oliveros, who coined the phrase "Deep Listening" (and who Ko also briefly mentioned in her dissertation) to describe both a compositional philosophy and a disciplined way of attending to sound, space, and contexts of performances. Oliveros's meditative and improvisational practices from the 1980s and 1990s embodied this approach to relational listening, later codified in her book *Deep Listening: A Composer's Sound Practice* (2005).[132] When one engages in Deep Listening, they are activating a mode of listening not commonly engaged in quintessential life. Rather than acting as a passive neutral receptacle to sound, Deep Listening asks participants to deeply consider how they are situated in relation to other sounds, bodies, and environments.

[132] Pauline Oliveros, *Deep Listening: A Composer's Sound Practice*, (Pauline Oliveros Publications & Ministry of Maat, 2005)

Deep Listening most clearly appears in Oliveros's ongoing project *Sonic Meditations* (1971--). *Sonic Meditations* is a collection of text-based scores designed to cultivate heightened awarenesses of sounds, spaces, and interpersonal dynamics. The meditations consist of open-ended instructions intended to be interpreted by participants.[133] These instructions direct participants' attention towards the act of listening itself by emphasizing breath, duration, bodily presence, collective awareness, and even invoking psychic sensibilities. This work remains paramount to modern musical feminism as it directly challenged the importance of technical execution, compositional control, musical authorship, and virtuosity, allowing the music to arise through the shared experiences of those involved. Participation in the meditations requires no specialized training or previous experience, nor does it ask for precision. While Ko's work with bubble wrap does not explicitly adopt this framework, her emphasis on attentiveness, sonic awareness and reactivity, as well as relational engagement with material resonates with Oliveros's practice, further situating Ko's work as an extension of the experimentalist traditions of the late 20th century.

The environmentalist and feminist dimensions of *Breath, Contained* are elusive at first, but a careful consideration of the values within Ko's practice, combined with insights from her own published works, reveals how these contemporary sociopolitical concerns are embedded within her compositional approach. Her continuous engagement with bubble wrap models an approach towards environmentalism that prioritizes alternative modes of relation to materials, foregrounding attentiveness, care, and reciprocity, as opposed to detachment and indifference. Similarly, the feminist aspects of the trilogy also unfold throughout the work via interaction rather than declaration. Ko's own publications reveal how she inherits and transforms a lineage

[133] Pauline Oliveros, Sonic Meditations (Baltimore: Smith Publications, 1971).

of feminist experimental music, moving from the directly confrontational body politics of composers like Judy Dunaway towards an embodiment of *ethics of care* more aligned with contemporary feminist discourse. Similarly, her works further build on other feminist musical traditions such as Oliveros's Deep Listening, where attentiveness and responsiveness challenge older models of mastery and control.

This step shows primarily how sociopolitical concerns can be contained within music even when not publicly declared. Specifically, Ko's interests are most clearly manifested in the ways she produces sounds through changes in textures, timbres and gestures. This displacement of pitch and harmony as the primary carriers of musical meaning is significant. Timbre and gesture, typically delegated as secondary musical parameters, are features of music that are often ignored or sidelined in favor of melody, harmony, rhythm, and form. However, in Ko's work, these aspects become the primary way in which she communicates her aesthetic, philosophical, and sociopolitical interests. Thus, the analytical approach adopted in subsequent steps prioritizes timbre, gesture, and texture as the means with which to determine musical meaning.

Step 4 – Music Analysis, Introduction

Step 1-3 above explored the conceptual, collaborative, and socio-political aspects of the *Breath, Contained* trilogy. Step 1 tracked the creative evolution of the work, from an interest in the musical and creative possibilities of bubble wrap, to an exploration of how bubble wrap might interact with traditional instruments in a concerto framework. Step 2 unveiled how essential ensemble interaction and involvement are to realizing the work. And lastly, step 3 probed into the feminist and environmentalist dimensions of the work, in turn discovering how Ko's series functions within a long tradition of feminist experimental works and how her pieces

utilize a feminist ethics of care to comment on how we might better care for our planet through our treatments of disposable objects. These steps showed how *Breath, Contained* is much more than a novelty work featuring a unique instrument; it is also an investigation into how material properties can generate musical logic. The steps also show how musical meaning is created through interactions between the composer, the audience, the performers, and the object itself. I pivot now to musical analysis, seeking how these relational details emerge in the music itself.

To incorporate my research with my musical analysis, I have derived a set of questions that inquire into some of the key elements explored above. Those questions are: How do the material constraints of bubble wrap (its transparency and pitchlessness) determine what becomes musically possible? How do gesture and performer interactions function as structural parameters? How do playful, subversive and careful treatments of the material manipulate expectations and redefine musical outcomes? The first question coincides with Ko's interest in the materiality of bubble wrap as discovered in Step 1. Question 2 combines insights from collaboration as discovered in Steps 1 and 2 to inquire as to how they impact live performances of her works. Lastly, the final question combines Ko's prioritization of subversion and play as musically generative forces with the ethics of care uncovered in Step 3. While each entry in the trilogy differs in scale and instrumentation, these questions remain constant, allowing for comparative insight without imposing a uniform formal model.

Each entry in the *Breath, Contained* series demands a distinct analytical lens, calibrated to its instrumentation, collaborative context, and formal ambitions. Thus, the analysis of *Breath, Contained II* will feature Dora Hanninen's theory of segmentation alongside James Tenney's concept of Temporal Gestalts. Through this analysis, I will uncover how performer interactions and gestural transformations create segments in the work that combine to form a quasi-

palindromic arch form. *Breath, Contained III* will use a drastically different lens. With its allusions to the classical concerto, the work presents the possibility for a more traditional music-theoretical formal framework. Thus, I adopt sonata theory as defined by Hepokoski and Darcy (2006)[134] to examine how the concerto both follows and diverges from the rhetoric of the form. This approach will demonstrate that the piece presents a typical type-3 sonata trajectory, complete with a P-theme, a transition, 2 S-themes, an EEC, a development, and a cadenza at the end of the development. However, where the work would normally continue into a recapitulation, Ko diverges from the typical structure to present a new section—the C section—focused on a singular large bubble as opposed to sheets of bubbles.

Step 4 – Music Analysis, *Breath, Contained II*, Musical-Analytical Tools

One of the biggest challenges in approaching Ko's work is that much of her music is improvisatory. *Breath, Contained II*'s score is a one-page guided group improvisation with time-based segmentation and notational guides. This presents a significant problem in deciding how to analyze the piece. Thus, I turn to Dora Hanninen's *A Theory of Music Analysis* (2012) as a guide to aid in defining sectional boundaries in the works. Hanninen's book provides a metatheory on segmentation that is particularly suited for works where formal boundaries are not predetermined. In the first half of her book, she provides three musical domains that can be used to interpret and justify segmentation: the Sonic (S), the Contextual (C), and the Structural (T).[135]

[134] Hepokoski, James, and Warren Darcy. *Elements of sonata theory: Norms, types, and deformations in the late-eighteenth-century sonata*. Oxford University Press, 2006.

[135] Hanninen, *A Theory of Music Analysis.*

In the following discussion, I start by summarizing Hanninen's approach, then I delve into how I adapt her framework for this project.

The Sonic domain comprises perceptual features available to the listener, such as changes in register, texture, dynamics, articulations, or silence. She further divides this domain into two categories: S_1 and S_2. S_1 refers to sonic criteria that create segments via temporally adjacent events, meanwhile S_2 creates segments between events that may not be temporally adjacent. So, $S_{1\text{-duration}}$ may refer to a duration between two consecutive attack points, meanwhile $S_{2\text{-duration}}$ may refer to general durational proximity of events that may not occur directly after one another.[136]

The contextual domain draws upon patterns and pattern recognition between musical events, often assuming basic music-theoretical knowledge regarding pitch, set class, rhythm and meter. Unlike sonic criteria, contextual criteria can branch into numerous subtypes depending on context. Examples of these various subtypes include: pitch contour (C_{cseg}), sets of pitch classes (C_{pc}), pitch class intervals (C_{INT}), and set classes (C_{pc}). For example, the criteria $C_{SC\ 3\text{-}4(015)}$ would represent a segmentation based on the presentation of set class 3-4(015). As another example, were a piece to use the specific interval ordering of <+9, -8, +7>, a segmentation based on this grouping could be notated as $C_{ip\ <+9,\ -8,\ +7>}$.[137]

Lastly, the structural criteria creates segments via interpretations supported by a theoretical framework. Like contextual criteria, structural criteria rely on musical theories, but they differ in that structural criteria are concepts found within the music, rather than aural percepts and associations perceived within the sound. Crucially, structural observations alone make for weak segmentation arguments. They are best utilized in conjunction with sonic and

[136] Hanninen, *A Theory of Music Analysis*, 23 – 32.

[137] Hanninen, *A Theory of Music Analysis*, 32 – 43.

contextual evidence, thus ensuring that analytical claims remain tethered to audible or culturally legible phenomena. As an example of the Structural domain with an orienting theoretical framework, Hanninen uses twelve-tone row theory. From here, she derives subtypes of the Structural criteria such as T_{row}, which describes transformations of a row. T_{T9P} would therefore describe a row that has undergone the transformation T9. $T_{row\ ops}$ can then be used to further specify detailed transformations, such as $T_{T9P\ ops\ 0\text{-}4}$, where only members 0-4 of the row have been transformed by T9. Hanninen then uses this framework to describe row transformations in Babbitt's *Three Compositions for Piano*.[138] This framework does require that the orienting theoretical framework be chosen and defined by the analyst, leaving these criteria rather open-ended and presenting the possibility for a work to be analyzed under multiple and differing frameworks—a possibility that I embrace and encourage in my work.

With this understanding in mine, I now elaborate on how I have adapted and altered Hanninen's framework for my analysis, beginning with the Sonic domain. In *Breath, Contained II,* the Sonic domain is the immediately perceptible surface of the music. An activation of S for this work would consist of a change in material gesture (e.g., from a sweep to a tap). Thus, my categorization of S stays close to Hanninen's original definition.

However, since Ko's work lacks pitch and harmony, I slightly alter my approaches to the Contextual and Structural domains. In this analysis, I use the C domain to track changes in the ways that the ensemble interacts with each other. An activation of this domain, therefore, could happen when the group switches from individual to coordinated gestures, or vice versa. While Hanninen's use of the C domain involves tracking similarities, relationships, and changes within

[138] Hanninen, *A Theory of Music Analysis*, 43-47.

the music, I use it to track these exact kinds of changes in how the performers interact with one another.

Lastly, the Structural domain is perhaps the most complex, in part requiring an orienting theoretical framework. In Hanninen's examples, she often invokes set class theory or Schenkerian frameworks for this task. However, such tools are inaccessible to works that lack distinct pitches. Thus, I borrow from James Tenney's concept of Temporal Gestalts (TG).[139]

Tenney's concept of Temporal Gestalts, first published in *Meta + Hodos* (1988), and later elaborated in publications like *From Scratch: Writings in Music Theory* (2014), is a tool for understanding and identifying perceptual shifts in a piece of music. Tenney describes TGs in three nested units: the Element (smallest indivisible sound), the Clang (a cohesive group of elements perceptually segmented in musical space), and the Sequence (a sustained series of Clangs). This can be further elevated to the level of section, then ultimately the piece itself, and even further into the levels of series and corpus.[140] For this analysis, however, I use the first three levels of Element, Clang, and Sequence.

Applying Tenney's TG concepts to the Structural (T) domain involves tracking changes in the perceivable hierarchy of sound grouping. For instance, a diffuse field of uncoordinated sounds may be heard as a Sequence, whereas a sudden, unified gesture (like a large tutti swipe) can cohere into a single Clang. The distinction is not determined solely by ensemble coordination (that would be the realm of the Contextual), but by the listener's perception of temporal boundedness and unity. A solo performer could present a gesture that is perceived as either Element, Clang, or Sequence, and, similarly, the entire ensemble could present a musical

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[139] James Tenney, *META + HODOS: A Phenomenology of 20th Century Musical Materials and an Approach to the Study of Form*, 2nd rev. ed. (Oakland, CA: Frog Peak Music, 1986).

[140] Tenney, *META + HODOS.*

moment that is perceived at any of these levels as well. This emphasis on perceptual salience, however, still reflects Hanninen's insistence that the Structural is often coincided with the Sonic and/or Contextual domains. Hanninen posits that an activation of the Structural domain could theoretically occur without support from the Sonic and Contextual, but my employment of TGs as the orienting framework makes this near impossible. Thus, activation of the Structural domain in this work will often coincide with the activation of the other domains.

The adoption and alteration of Hanninen's flexible approach allows for competing interpretations, and therefore not only reflects the spirit of this project but is especially valuable for the analysis of improvisational music. In the case of the *Breath, Contained II*, performers are frequently guided by instructions rather than prescriptive notation and this framework provides a means of tracing perceptible boundaries within these freeform interactions.

Step 4 – Music Analysis, *Breath, Contained II*

The score for *Breath, Contained II* is organized into a total of 22 sections, separated by rehearsal numbers. This suggests, at first, a clear structure, however, the listener's experience of the work does not always align with these notated sections. In many cases, transitions between rehearsal numbers occur without significant changes in gesture or texture, making them effectively inaudible to an audience. The opposite also occurs, where moments of musical contrast appear within a rehearsal unit. To address this issue, I use Hanninen's segmentational framework to re-map the work's form by describing the perceptual strength of boundaries between musical moments. To further avoid an over-reliance on notational boundaries, I also reference Ars Nova's 2021 recording of the work, available on YouTube, when describing

sections.[141] This further helps me connect my observations from interviews in Step 2 with musical analysis, as the Ars Nova's members' inputs into my Step 2 ethnographic inquiry were essential to helping me design my guiding questions. Through this analysis, I will find that the work's modular form creates an almost palindromic structure with the first A section being repeated in an almost perfect mirror-image. For the sections in between these two similar A sections, I further find that segmental boundary strengths create sections dictated by unique processes.

With this framework established, I then assign a numerical value of 0-3 between musical events in the work to create segments. This scale is based on how many of Hanninen's domains an event activates. A score of 0 (no activation in any domain) would be a non-event. A score of 1 (activation of only one domain) would constitute a weak boundary, or a slight variation or development of a previous musical idea. An example of this would be if the ensemble moved from performing separate, uncoordinated sweeps to sweeping together (Contextual). A score of 2 (activation of 2 domains) denotes a moderately significant shift. An example of this would be if the ensemble moved from random, uncoordinated squeaks to a coordinated handing-off kind of "relay" of sweeping gestures. Here, the Sonic domain is activated through a new playing technique (squeak to sweep), and the Contextual domain would be activated via a change in ensemble dynamics, moving from randomly squeaking to responding to one another in real time. The Structural domain, in this example, would remain at the level of Sequence between both events, as the audience hears a large field of random squeaks, then a large field of sweeps. The general wash of a texture is what keeps the TG at the level of Sequence, as opposed to, say,

[141] Tonia, Ko, "Breath, contained II," YouTube video, 13:19, posted by hertzbreakerz, May 15, 2020, https://www.youtube.com/watch?v=gQESMHxmxrs

suddenly coordinating sweeps with clear beginning and ends, sandwiched between either silence or other gestures, which would classify as a Clang.

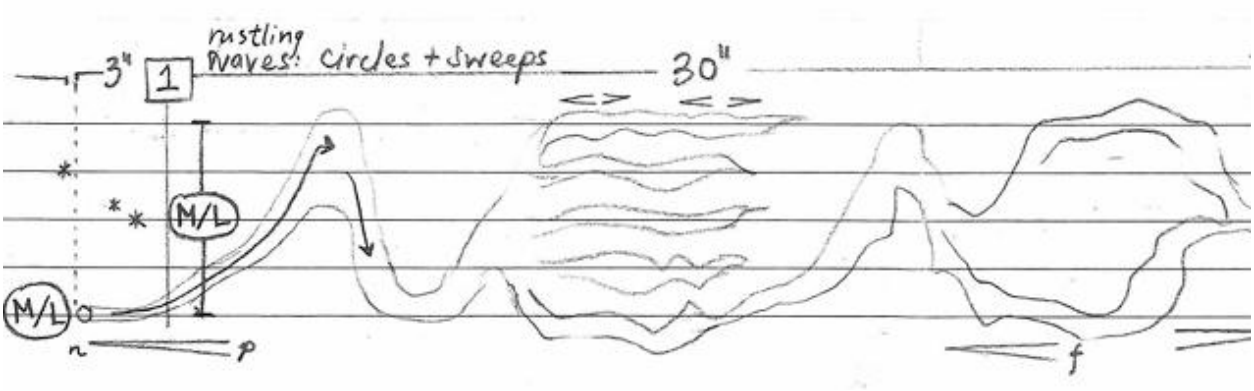
Lastly, a score of 3 (activation of all domains) would denote a new section entirely. These moments are the primary structural pillars of the work where a new sound, performer configuration, and hierarchical shift in gestalt occur all at once. For example, a boundary strength of 3 would occur if the ensemble shifted from randomly popping small bubbles to suddenly performing a tutti large swipe. The Sonic would be activated via the new gesture, the Contextual would be activated through the sudden ensemble coordination, and the Structural domain would alter from the level of Sequence (a large sounding wall of popping bubbles) to Clang (a singular swipe defined clearly in musical space). Through these metrics, I demonstrate how the work's large-scale form can be understood through interactions between gestures, performers, and groups of perceptually salient musical ideas. Example 20 below shows how I will delineate sections based on these boundary strengths, then the following discussions will elaborate on these findings.

The first section of *Breath, Contained II*, which I call an A section, spans from the opening of the work until the silence that follows the "surprise!" gesture before rehearsal 4 in the score. In the Ars Nova performance, this section spans from 0:00 -1:54, with the introduction lasting from 0:00-0:24. The work begins from silence with an opening boundary strength of 2, activating the Sonic (S) and Structural ($T_{Sequence}$) domains. The onset of five performers independently popping small bubbles creates an immediate distinction from silence. Structurally, this initiates Tenney's Sequence Gestalt, creating a large wall of general popping sounds.

Form in *Breath, Contained II*		
Formal Section	**Subsection** (with time stamp and location in score)	**Strength of Segment Boundary**
A	Opening (0:00 – 0:24)	2 (S, $T_{Sequence}$)
	Rehearsal 1 (0:24 – 1:27)	2 (S, C)
	Rehearsal 2 (1:27 – 1:54)	1 (C)
	"Surprise!" (1:54 – 1:58)	3 (S, C, T_{Clang})
B	Rehearsal 4 (1:58 – 2:12)	1 (C)
	Rehearsal 5 (2:12 – 3:58)	2 (C, $T_{Sequence}$)
	Before Rehearsal 7 (3:58 – 4:17)	1 (C)
	After Rehearsal 7 (4:17 – 5:20)	2 (S, C)
	Before Rehearsal 10 (5:20 – 6:33)	2 (S, C)
	Before Rehearsal 12 (6:33 - 6:44)	2 (C, T_{Clang})
C	Rehearsal 12 (6:44 – 7:12)	3 (S, C, $T_{Sequence}$)
	Rehearsal 13 (7:12 – 7:41)	2 (S, C)
C	Rehearsal 14 (7:41 – 8:40)	1 (S)
	Before Rehearsal 15 (8:40 – 9:04)	2 (S, C)
D	Rehearsal 15 (9:04 – 9:29)	3 (S, C, T_{Clang})
	Rehearsal 16 (9:29 – 10:32)	1 (C)
	Rehearsal 18 (10:32 – 10:52)	2 (S, C)
	Before Rehearsal 19 (10:52 - 11:07)	2 (C, $T_{Element}$)
Subverted A'	Rehearsal 19 (11:07 – 11:29)	3 (S, C, T_{Clang})
Codetta	Rehearsal 21 (11:29 – 12:23)	3 (S, C, $T_{Sequence}$)
End Solo	Final module (12:23 – 12:33)	3 (S, C, $T_{Element}$)

Ex.20: Form chart for *Breath, Contained II*, showing how I segmented the work based on Hanninen's criteria

At Rehearsal 1 (0:24), the discontinuity remains at Strength 2, though the domains of activation shift to S and C. The sonic domain is activated by the new gesture of swishes, which sound considerably different from the previous pops. Similarly, the contextual domain is triggered by a change in ensemble interaction. The performers move from independently popping bubbles randomly to a "relay" coordination, where they hand off the swishing gesture in a linear chain, starting with performer 5, then performer 4, then 3, 2, 1, then reverse order. This coordination is shown below in Example 21. The 5-line staff that Ko uses to notate the music denotes each performer, with the topmost line representing performer 1's part and the bottom most line representing performer 5's part. Within this segment, there is yet another shift in the Contextual domain (boundary strength of 1 – variation of previous idea). The performers change from relaying the gesture to all performing together, then back to a relay. Furthermore, while the Sonic and Contextual domains change compared to the opening, I argue that the Structural domain remains the same here. Despite the change in timbre and coordination, the hierarchical gestalt level remains at the level of Sequence.

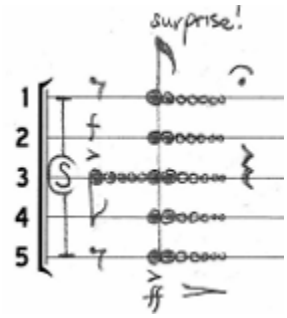


Ex. 21: Rehearsal 1, showing the "relay" coordination of the "circles + sweeps" gesture.

This gesture continues into Rehearsal 2 (1:27) where a weak boundary with a strength of 1 varies this idea. While the score indicates a shift from wide swishes across the sheets to more localized sweeps, the sonic result remains timbrally homogenous with the previous section. The

only significant shift, therefore, occurs in the Contextual domain. The previous "relay" is replaced with an accumulating texture. Performer 3 starts the swipes, then is joined by performers 4, 2, 5, and lastly 1, until they are all swiping together.

This builds into a "surprise!" gesture (1:54) preceding Rehearsal 4, which marks the work's first true sectional break with a boundary strength of 3 that activates all domains of segmentation. This gesture is shown in example 22 below. The Sonic realm is invoked through a change to a sudden high-velocity, loud and heavy sweep with a squeaking timbre. The Contextual is then involved through the unified synchronization of the gesture, and a change in the Temporal Gestalt from Sequence down to Clang. The field of pops/squeaks/swishes from previous sections dissolves into a singular gesture, preceded by a quiet moment where performer 3 gently squeaks, then followed by a long fermata rest, confirming the sectional boundary.



Ex. 22: "surprise!" Numbers on the staff line indicate each performer's part, while the "(S)" indicates that this surprise should be played on small bubbles

Following this "surprise!", the work enters a new section which I call the B section. The transition into Rehearsal 4 (1:58) begins with a boundary at a strength of 1, only activating the C domain. The same gesture is sustained from the surprise, however the ensemble continues into an almost homophonic texture. The group performs large vertical sweeps across their bubbles together, followed immediately by a solo response from Performer 3. This kind of call-and-

response maintains the structural level of Clang, as the listener perceives each pair of large swipes as a discrete, bounded object rather than an ongoing field of sound.

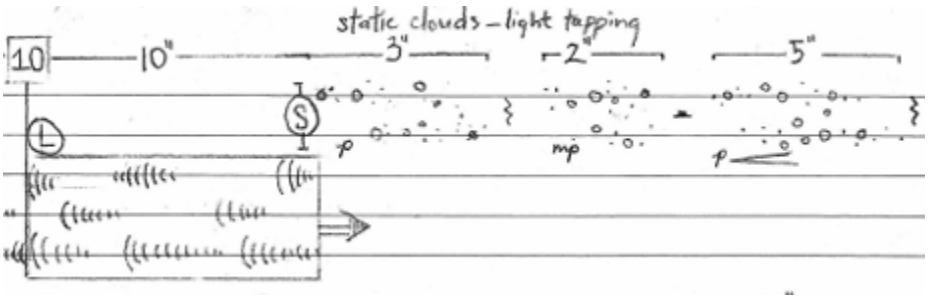
This changes at Rehearsal 5 (2:12), entering a new segment with a boundary strength of 2. Here, the Contextual and Structural domains both are activated. The ensemble abandons the call and response texture from the previous segment and begins a series of chains where they "converse" with both themselves and one another. Performers 1 and 2 "converse politely" with one another, while performer 3 is instructed to "converse w/ self irratically[sic]." This is then followed by performers 4 and 5, who are instructed to echo performer 3's gestures. This creates not only a change in the Contextual domain with how performers interact with one another, but also a change in the TG of this section, with the previously clear delineation of Clangs dissolving into a denser web of sound (Sequence). By the end of this segment, a gradual change in playing technique constitutes a change in the S domain, but because this change is gradual and occurs throughout the section rather than at the same time as the C and T changes, it functions as an internal variation (segment strength of 1) rather than a new sectional break.

A weak boundary of strength 1 occurs before Rehearsal 7 (3:58), as the conversations between performers realign into a duo and trio texture. Performers 2 and 4 together execute a sweep on large bubbles with a crescendo, to which performers 1, 3 and 5 react with a sweep on small and medium bubbles with a decrescendo in a seamless elision. This relational shift activates the Contextual domain, while the sonic gesture and hierarchical level of Sequence remain constant.

Shortly after Rehearsal 7 (4:17) is a segment with a strong boundary that activates 2 domains (S and C). At this point, the ensemble foregoes the duo and trio split to return to the accumulating texture reminiscent of the same one from the A section. The Sonic domain is

activated through a change to a squeaking made with flat fingers. Performer 1 begins the accumulation this time, joined by performers 2-5, sequentially. Thus, the Contextual domain is activated by this change in ensemble dynamic. However, the work's TG remains at the level of Sequence as the sweeps largely blend into one another without clearly salient boundaries around each sound.

As the B section gains traction and excitement, the ensemble's social structure starts to fragment. Shortly before Rehearsal 10 (5:20), a strength 2 boundary occurs as the group reorganizes into another duo and trio split. The Sonic domain here is activated by a change in gesture from the previous sweeps to grating clicks (notated with curved lines placed in close proximity) and light bubble taps (notated as circles and dots spread sporadically throughout the staff). This new timbre is distributed across a specific divide, with performers 3, 4 and 5 producing the grating sound on large bubbles while Performers 1 and 2 provide the bubble taps. This is shown below in Example 23.



Ex. 23: Rehearsal 10, showing the trio and duo texture, with performers 3, 4 and 5 performing grating clicks on large bubbles while performers 1 and 2 lightly tap on small bubbles

This state is interrupted just before Rehearsal 12 (6:33) by a brief solo from performer 5. This moment triggers both the Contextual and Structural domains, activating a boundary strength of 2. The sudden swap to a solo alters the logic of ensemble interaction, while the ear perceives the solo as a discrete Clang, ending with a brief silence. However, since the performer continues

with the grating squeak gesture from before, this does not activate the Sonic domain and thus does not denote a new section.

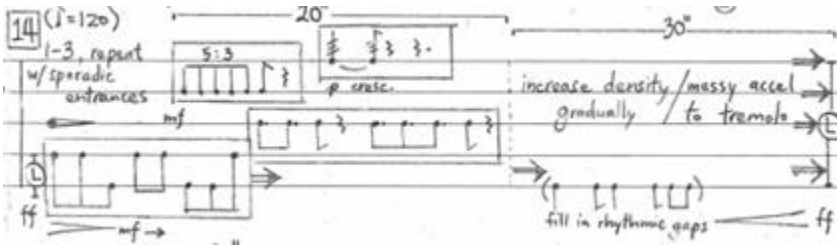
At Rehearsal 12 (6:44), the work undergoes its second sectional segmentation with a strength 3 event, which opens a new section that I call Section C. This differs from the previous sectional boundary event with the "surprise!" gesture. While that event served to end Section A, this sectional segmentation opens Section C. Thus, the structural function of a strength 3 event is not always identical, its role is dictated by the context surrounding it. In the preceding section A, the "surprise!" collapsed the music's previous tension, while here, this gesture acts more like a trigger for a new section, pushing the ensemble into a new section.

At this moment, the ensemble is reconfigured into another duo and trio split. Performers 4 and 5 execute large, rapid, and forte sweeps across the bubbles while Performers 1, 2 and 3 lightly tap on the bubbles with swelling dynamics. This new sound activates the S domain, while the duo and trio coordination activates C. Lastly, the T domain changes by creating a wall of sound without clear audible boundaries, unlike the previous solo section. The music therefore returns to a TG level of Sequence as the gestures blur into a continuous wall of sound.

Right before Rehearsal 13 (7:12), the performers reenter with a segment that has a boundary strength of 2, changing the Contextual domain once again and altering the S domain with their new technique of a wide swoop on the bubbles created with the backs of their hands.

At Rehearsal 14 (7:41), the work has another slight variation with a strength 1 segment. The duo and trio split from before remains constant, preserving the Contextual domain, but the Sonic material changes as they transition to rhythmically strict clicking on single bubbles, shown below in Ex. 24. Despite this rhythmic precision, the sporadic entrances of the upper trio of

performers maintain this event at a TG level of Sequence, rather than a unified Clang.



Ex. 24: Rehearsal 14, showing the rhythmic precision of the performer's parts and the "sporadic entrances" of performers 1-3

The final moments of Section C involve an intensification of activity through a "messy" accelerando. Shortly before Rehearsal 15 (8:40), a boundary strength of 2 occurs as the performers transition into a rubbing motion on the bubble sheets. This change in the Sonic domain produces a high-pitched squeak, notated as a tremolo in the notation. At the same time, the Contextual domain is activated as the performers unify to perform this gesture together. However, despite these shifts in sound and coordination, I argue that the Structural domain remains inactive. The ear continues to perceive this squeaky tremolo as a Sequence—a general cloud of sound without internal boundaries between the Elements that would constitute a change to a Clang. Thus, this segment acts like a formal buffer, creating a moment of high tension and energy before the work's next major formal section. This moment gains a slight variation with a strength level of 1 as the performers transition into the grating, creaking sound heard in the previous section.

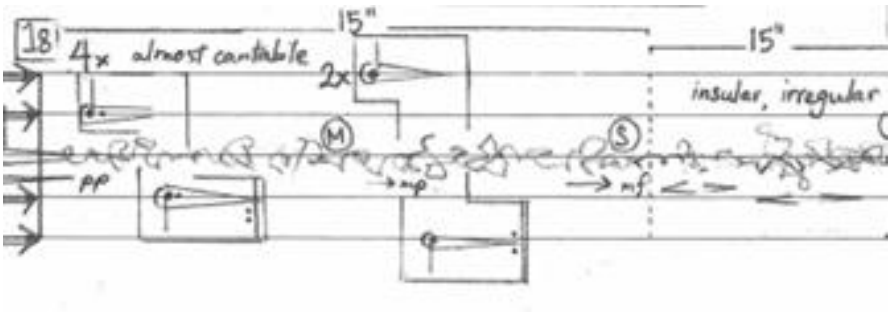
Section D begins at Rehearsal 15 (9:04) with a definitive Strength 3 boundary. Here, all domains are activated. The Sonic domain changes in that Performer 5 begins a "caressing" gesture with the backs of their hands that creates a static, white-noise like sound. This sound will act as a "drone" throughout this section. Above this drone, the remaining performers are split into two duets. Performers 1 and 2 operate together, creating rapid, high-pitched sweeps on

medium-sized bubbles. Against this, performers 3 and 4 create rhythmically articulated clicks on bubbles. Performer 3 acts first, and performer 4 is instructed to echo performer 3's gesture. This new configuration of 2 duets and a drone constitute a change in the Contextual domain as well. Lastly, the level of Temporal Gestalt changes back to the level of Clang here. While the caressing gesture could be heard as a sequence on its own, the sweeps and clicks of the two duets are clearly defined in time—the listener can hear when each gesture begins and ends, thus the ear perceives them as discrete musical objects rather than a mass of sound.

At rehearsal 16 (9:29), a Strength 1 boundary appears, marking a variation of the previous section as the roles begin to circulate through the ensemble, changing the C domain. The "caressing" gesture is handed off to Performer 1, while Performers 2 and 3 take over the duet of sweeps. This fluid exchange continues into Rehearsal 17, where the score literally instructs the performers to "trade off" and "respond" to one another. Here, the static-like swooshes are given to Performer 2, while the fast sweeps are swapped from Performers 1 and 5 to just Performer 3.

This build-up of tension leads to Rehearsal 18 (10:32), which I categorize as a Strength 2 boundary. In this segment, the ensemble coordination becomes strictly paired. Performer 3 maintains the static drone while the remaining performers pair off to perform sweeps and echoes. Performer 2 begins with a sweep, which Performer 4 echoes. This exchange is shown below in Example 25. The pair executes this gesture a total of four times in a call and response before Performers 1 and 5 take up the gesture. Even with the presence of the static drone, I argue that the Structural domain remains at the level of Clang, as the sweeps and echoes are clearly marked in time and experienced as discrete events.

The section eventually thins out as all performers except Performer 3 drop out, leaving a 15-second tail of static-like noise that brings Section D to a close. In this moment, there's a slight variation of the previous section as the Structural level changes to simply Element, focusing entirely on the singular sound of the rustle.

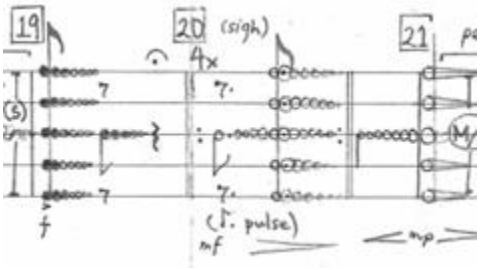


Ex. 25: Rehearsal 18, showing the pairings of performers as Performer 3 "drones" beneath them

At Rehearsal 19 (11:07), the work restates a familiar gesture from before, creating a sense of symmetry in the overall form. The "surprise!" that concluded the A section returns, signifying not only a new section, but specifically a return to the original A section. Interestingly, this gesture is presented as a mirror-image of the first iteration of the "surprise!", generating an almost palindromic recollection of the earlier module. While the original "surprise!" in Section A consisted of a gentle sweep by Performer 3 followed by an ensemble tutti swipe, Rehearsal 19 reverses this order. First, the ensemble performs the tutti swipe, then Performer 3 "echoes" this by executing a solo, gentle sweep.

This mirror-image is reinforced by the sectional boundary strength of 3. Here, the Sonic domain is activated by the sudden change to the high-velocity sweeps that sound significantly different from the previous section's gestures. The Contextual domain is activated by a sudden tutti coordination, compared to the previous solo and double duet configuration. Lastly, the Structural domain is once again activated here. The previous TG level of Element that focused

the sound of performer 3's solo elevates to the level of Clang as the performers swipe together in a clearly bound way. This is shown below in Example 26.



Ex. 26: Rehearsals 19-21, showing the restatement of the "surprise!" from earlier, and the echoing "(sigh)" that follows.

However, Ko subverts this expectation of a true palindrome. At Rehearsal 21 (11:29), Ko skips a gesture in the sequence. Section A proceeded through the gestures of rustling, then accumulating sweeps, then ultimately the surprise. Here, Ko omits the accumulating sweeps entirely and jumps straight to the rustling. This sudden change that breaks the logic also creates a new section, as this moment is defined by a sectional boundary strength of 3. The Sonic domain is altered through the change in playing technique, the Contextual is altered by a transition into the relay coordination seen previously. The Structural TG hierarchy is changed as these rustles are perceived as a Sequence of sound. Thus, I consider this moment somewhat of a codetta. This breaking of the pure palindrome is a significant formal divergence, preventing the work from being a closed loop and instead driving the work to its final moments.

The work ultimately ends with a 10-second solo from performer 3 (12:23), who is instructed to drag on small bubbles with a hooked finger, a gesture that is notated with small dots placed in proximity. This final moment constitutes its own section, as this sudden change creates a sectional boundary strength of 3, with the Sonic domain activated through change in playing technique, the Contextual changing via the new solo texture, and the Structural dissolving all the

way down to Element as all other musical sounds are stripped away, magnifying the listener's attention to this singular sound.

Through this application of segmental boundary identification and Tenney's Temporal Gestalts, the form of Breath, Contained II reveals itself as a fascinating study in quasi-symmetry. By tracking the moments that create a boundary strength of 3 and using those moments to create segments, I find that the work contains X sections: an introduction, an A section, a B section, a C section, a D section, an A' section, and a codetta with a small conclusion. This nearly palindromic arch suggests, at first, a closed loop, however, Ko subverts this by only partially mirroring the initial A section.

Having established this formal map, I now have the necessary musical evidence to address the guiding questions established at the outset of this inquiry. In the following section (Step 5), I will interpret these findings within the context of Ko's interests in materiality, collaboration, subversion, feminist performance practices, and environmentalism.

Step 5 – Interpretation, *Breath, Contained II*

To interpret these analytical findings, I return to the three guiding questions designed at the beginning of Step 4: "How do the material constraints of bubble wrap (its transparency and pitchlessness) determine what becomes musically possible? How do gesture and performer interactions function as structural parameters? How do playful, subversive and careful treatments of the material manipulate expectations and redefine musical outcomes?" Through an exploration of these questions, I find that the work's form segments neatly into sections that can be characterized by exploration of the physical properties of plastic, shifting social dynamics of the

quintet, and a reorientation of the work's trajectory away from consumption toward the recognition of the musical possibilities of this material.

How do the material constraints of bubble wrap (its transparency and pitchlessness) determine what becomes musically possible?

In this work, the unique sonic profile of bubble wrap necessitates the development of a musical syntax that does not rely on tonal closure to denote new sections. Because the material produces a relatively narrow range of sounds, a change in playing technique alone is often insufficient to signal a major sectional shift, especially considering how the listener may perceive these isolated timbral changes as part of a continuous texture rather than as discrete formal markers. As an example of this, consider the opening A section. Here, the ensemble begins the work by popping bubbles independently for twelve seconds, creating a wall of sound that is perceived at the TG level of Sequence. When the performers transition to the "relay" coordination of swishes, there is a clear activation of Hanninen's Sonic domain through its new timbral profile. However, because the density of sound remains constant, and each individual swish is absorbed into the overall texture, the ear still perceives this as a continuation of the initial Sequence. If this structural analysis relied solely on changes in playing technique to define its sectional boundaries, these two moments would constitute two different sections.

While this could present the case for a modular form with many small modules, such interpretation diminishes the formal impact of the "surprise!" that occurs at the end of Rehearsal 4. This event is structurally significant in how many contrasts it provides to the preceding music. In addition to the new Sonic profile of the fast sweep, the sudden, vertical coordination of the ensemble members creates a striking Contextual contrast. Furthermore, the gesture's perceptual

salience is emphasized by its temporal isolation, as it is preceded and followed by rather quiet events. Leading into the gesture is a gentle swipe from performer 3, and following it is a fermata rest. The silence and quiet that surround this "surprise!" grant it an extra level of structural weight that a simple change in playing technique could not achieve on its own. Therefore, the "surprise!" demonstrates that in a pitchless environment, timbral change is a necessary but insufficient condition for formal segmentation. Thus, it is exactly the material limits of bubble wrap that demands a more thorough logic of coordination and temporal arrangement to articulate the work's primary formal sections.

Furthermore, Ko organizes the various bubble wrap sounds to create a large-scale trajectory of tension and release by distributing soft and harsh timbres strategically. Sections A and B are largely characterized by a smooth timbral profile, consisting mostly of swishing, swiping, and light clicks on the bubbles. While there are internal swells of tension within these sections, they remain consistently smooth. This is in direct contrast to Sections C and D, which feature harsher grating and squeaking sounds created through intense pressure on the bubbles. Ko then mellows out these textures at Section A' and the codetta, returning to the smoother sounds of the work's opening before concluding with a series of gentle, isolated drags on the bubbles. Although this trajectory is not perfectly analogous to harmonic paradigms in tonal three-part forms, it nonetheless follows a consistent logic of smoothness moving to harshness then returning to smoothness. This suggests that bubble wrap's unique plastic materiality offers a timbral substitution for harmonic tension and release, which in of itself creates somewhat of a form, even without considering other musical parameters.

How do gesture and performer interactions function as structural parameters?

In the absence of a harmonic foundation, the configuration of the ensemble (such as how the performers listen to, lead, and follow one another) becomes one of the primary structural parameters. In my analysis, I specifically designated the Contextual (C) domain to track these shifts in ensemble interaction. While Hanninen's original definition of the Contextual domain focuses on how a musical segment recalls or relates to previous segments within the score, I have adapted it here to encompass the relational texture of the quintet. This adaptation is essential because, in a work where tonality is impossible, one of the more salient features for the listener is often the changing dynamics and coordination of the performers on stage. Most significantly, when applying these domains to segmentations, I find that each section of the music is characterized by a distinct mode or process of interaction between the members. The consistency of these results suggests that this interactional mapping is not an arbitrary analytical tool, but a functional method to accurately reflect the work's formal construction.

This logic of how interactions create form is most visible when noting how Ko changes the configuration of the ensemble between sections. Section A is primarily defined by a trajectory of the individual towards the collective. The performers start with independent popping and progress toward the "relay" of swishes, eventually accumulating into the "surprise!" gesture—the section's ultimate expression of ensemble unity. This move from the five performers as individuals to the five performers as one large part provides a clear example of how this process defines this opening section.

In contrast, Section B primarily focuses on a sort of polyphonic dialogue amongst members. Here, the members act as independent agents that "converse" with one another (or themselves). This interconnectedness replaces the one-towards-all paradigm of Section A with

this more chamber-music-like sensibility, where forward momentum is carried by the changing duo and trio arrangements rather than a singular goal. This further builds into Section C, where the ensemble begins to break off into groups. Performers 4 and 5 perform in their own private world of large sweeps, primarily listening to and reacting to one another. Meanwhile, Performers 1, 2, and 3 maintain their own separate texture of varying light taps. By splitting the ensemble like this, Ko manipulates the way performers interact with one another to create a contrast that is later resolved when these two groups dissolve into the tutti rubbing gesture that closes the section.

The work reaches its highest level of relational complexity in Section D, which consists of a constant shuffling of roles between performers. Rather than maintaining stable duets from the previous section, the ensemble fluidly exchanges roles between one another. Gestures are handed off from Performers 1 and 2 to Performers 2 and 3, as well as Performer 5 to Performer 1, so on and so forth. This shuffling acts to further destabilize the previous duo and trio texture, creating chaotic energy that builds even more tension. When the "surprise!" gesture is restated and the work enters Section A', Ko shows how this specifically vertically aligned coordination can signal the work's approaching conclusion.

Thus, this mapping of relational modes reveals that the work's form is not created solely through sequencing of sounds, but also through the choreography of the ensemble's interactions. The manipulation of levels of unity and division between members shows how performer interactions can be crucial to the articulation of the work's form.

Lastly, as an additional point, these interactional modes are what allow for more fluid movement between levels of Temporal Gestalt. As I showed in my analysis, the Structural domain is often linked to the Contextual. For instance, in Section D, the ensemble reconfigures

into a series of duets and echo gestures. The change from the preceding TG level of Sequence back to discrete Clangs is possible in part because of this mode of interaction. Because Performer 4 is instructed to echo Performer 3's gesture, the listener can perceive a clear temporal boundary around the gesture; a clear beginning, end, and echo. Without this coordinated call and response, the sound risks dissolving back into a mass.

How do playful, subversive, and careful treatments of the material manipulate expectations and redefine musical outcomes?

Beyond the mechanics of sound and social coordination, the work's form is driven by structural and notational strategies that challenge the listener's habitual engagement with this mundane object. Specifically, Ko's use of formal subversion and technical playfulness disrupts the predicated expectations usually associated with both bubble wrap and arch forms/palindromes. These strategies ensure that the listener's focus is redirected from the anticipated destruction of the material toward the musical details of the performance.

The most prominent example of this is Ko's subversion of the pure palindrome. The work progresses in a largely modular way until Rehearsal 19, when the familiar "surprise!" gesture recurs. For this listener, this establishes an expectation for either a recapitulated A' form or a palindromic arch form. In either case, the listener expects to hear material that they've already heard. However, by skipping the subsection at Rehearsals 2 and 3 that contained the accumulation of sweeps across the ensemble and instead jumping straight into the rustling codetta, Ko effectively "pulls the rug out" from under the audience.

This begs the question as to why Ko would tease at a clear symmetrical logic only to abandon it before the end. One potential answer to this lies in the rejection of formal inevitability. A perfect palindrome suggests a closed and deterministic system. If one has heard

the beginning and they recognize the musical material at the end, then the music has already essentially ended. The audience member can mentally "check out," they understand the end is near and that the performance is done. However, by omitting a large structural module from the opening, Ko surprises the audience yet again. This compositional "trick" disrupts any passive listening that sometimes accompanies the recognition of a conclusion. Thus, in breaking the symmetry of the arch form, Ko forces the listener back into a state of active listening, ensuring that the work's conclusion is experienced as a live and unpredictable event rather than a summarization of the preceding 12 minutes.

Ko's playfulness further supports this subversion, primarily manifested through her notations and instructions to performers. Though I often spotlight the moments where she uses abstract and affective cues, many of the directions Ko gives the performers are literal and technical. For example, at Rehearsal 7, she writes "tutti squeaking w/ flat fingers, each player cresc. to release." Another example occurs in the middle of Rehearsal 14, where she states "increase density gradually/messy accel. to tremolo." One can see how her more affective and whimsical directions stand in contrast to this, exemplifying a sense of purposeful playfulness.

Though the "surprise!" and the "conversing" are emblematic of this attitude, other affective (and sometimes near-impossible) instructions are given to the performers, such as at Rehearsal 18 where performers 2 and 4 are told to sweep "almost cantabile." This impossible demand forces the performer to impose a lyrical shape onto a traditionally non-musical material. While the bubble wrap cannot sing and cannot produce a sound quality similar to singing, the performer's attempt to elicit that quality of sound creates a particular sound that perhaps purely technical instruction might fail to produce. This strategy shifts the performer's focus from the

mechanical execution of sound to the shaping of its character, which in turn provides a layer of expressive nuance.

Additionally, these playful instructions act as a way to bypass the limitations of standard musical notation. Traditional Western notation prioritizes pitch and rhythmic precision above all other parameters. However, while rhythm and relative pitch register are musical parameters available to bubble wrap, they are less salient than the timbral variety of the material, and as a consequence, standard notation struggles to fully articulate the granular nuances that Ko sought to capture in this work. Ko's playful instructions, then, are employed strategically to capture particular sounds and interactions between the performer and the material. For example, when the performer "converses" with others/themselves through their bubble wrap, an irregular, speech-like rhythm with nuanced variables in the friction is produced in a free and varying way. Purely metric instruction could not achieve such an aleatoric quality. Therefore, these instructions are less of a gimmick or joke and more of a genuinely technical directive that ensures that the character of the section is maintained even with slight variations between performances.

Finally, it is necessary to address how this work appeared in Ko's dissertation alongside her examination of Judy Dunaway's experimental balloon performances and how her work contributes to this lineage of feminist performance practices. As discussed in Step 3, I find that Ko's clearest form of engagement with this discourse lies in her care for and treatment of this disposable object. While Dunaway's balloon pieces often spotlighted female sexual agency and the tension of imminent rupture, *Breath, Contained II* employs a different kind of materialist ethics. In both *Breath, Contained I* and *III*, the works build toward a climactic pop as the

teleological goal for the performance. However, *Breath Contained II* begins with the pop—a significant formal departure from the other entries.

So, what remains of the work once the anticipation of the pop is removed? By exhausting the material's most "entertaining" utility in the opening seconds, Ko rejects her previously established teleology driven by the anticipation of a terminal rupture. However, notably, the performers execute these initial pops on a separate (perhaps "sacrificial") sheet of bubble wrap. In other words, the bubbles that the performers primarily play on are not the same bubbles they destroy at the beginning.

This separation suggests that the pops are more than just an exciting way to open the work. One can read this as a ritualistic shedding of the object's consumer identity. The popping on the surrogate sheet satisfies and subsequently dismisses the listener's primary association with bubble wrap as a disposable toy. This cathartic dismissal allows the primary sheet of bubble wrap to be recontextualized as a musical instrument rather than a commodity awaiting destruction. Consequently, the remaining twelve minutes are dedicated to an exploration of this material that the audience understands could be popped but is instead purposefully preserved. The work ends with the quiet, ten-second solo drag by Performer 3 that allows the audience to deeply consider the musical depth of this object in its intact, unconsumed state.

In conclusion, *Breath, Contained II*'s structural manipulation and playful notation transform the bubble wrap from a disposable toy into a musical medium. By beginning with the pop and subverting the symmetry of the arch form, Ko reorganizes the work's formal logic. This allows the subsequent twelve minutes of the work to be defined by the specific coordination between sonic changes, ensemble coordination, and perceptual grouping of musical events. As

we will see in *Breath, Contained III*, this approach is unique to this work, as Ko redefines her strategies to fit within the genre of the orchestral concerto.

Step 4 – Music Analysis, *Breath, Contained III*

My analysis of *Breath, Contained II* uncovered a quasi-palindromic form created in part through differentiations in timbral gestures, ensemble coordination, and salient sonic units. I turn now to the third work in Ko's trilogy, *Breath, Contained III*. This work takes a dramatically different structural approach by invoking the genre of concerto. Featuring a solo bubble wrap player and full orchestra, this work uses a much more traditional framework that can be understood through the lens of sonata theory. However, as we will find in my analysis of this work, Ko once again subverts the form. In the following analysis, I will outline how the piece is organized into an Exposition--complete with a P theme and two S themes—followed by a Development, and ultimately a "Recapitulation." This recapitulation alters the expected return of the exposition's materials in ways that create a new logic of tension and release suitable for this solo instrument.

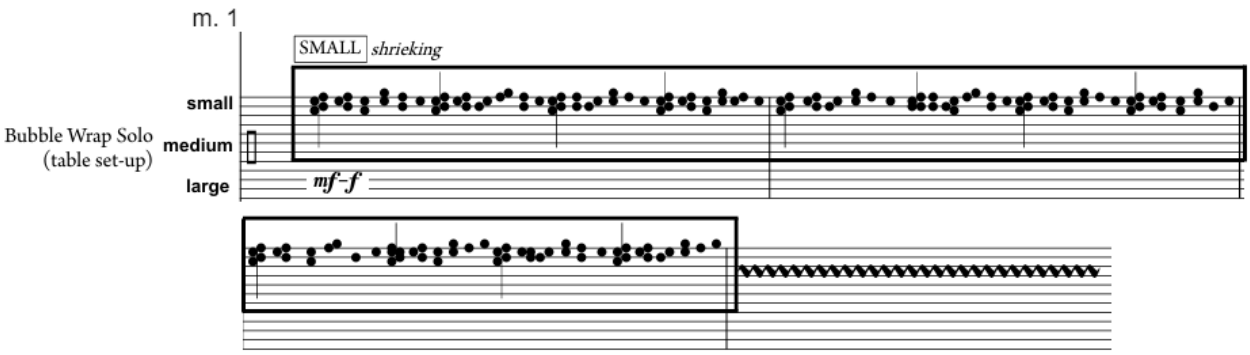
Because the work uses sonata form, I abandon the use of Hanninen and her three domains for segmentation, instead turning to sonata theory as described by Hepokoski and Darcy (2006).[142] In doing so, I find that many of the work's large-scale formal trajectories can be understood through concepts drawn from type-3 sonata form, even as the piece diverges from that model in important ways. Through this analysis, in addition to finding ways that the work follows and rejects elements of this form, I will also uncover the ways in which Ko translates sonata form's tonal logic for a pitchless instrument.

[142] Hepokoski and Darcy, *Elements of Sonata Theory.*

Before proceeding, it is important to clarify the role sonata theory plays in this analysis. *Breath, Contained III* does not map perfectly onto eighteenth- or nineteenth-century sonata models. Rather, I use Hepokoski and Darcy's framework as a heuristic tool for describing large-scale patterns of contrast, tension, departure, and return (or lack thereof) throughout the piece. These labels are not intended to draw a one-to-one parallel to historical sonata practice, but to provide a vocabulary for discussing how Ko invokes, adapts, and subverts expectations typically associated with these sonata-like forms. Thus, this analysis treats sonata theory as an interpretive framework rather than a prescriptive template.

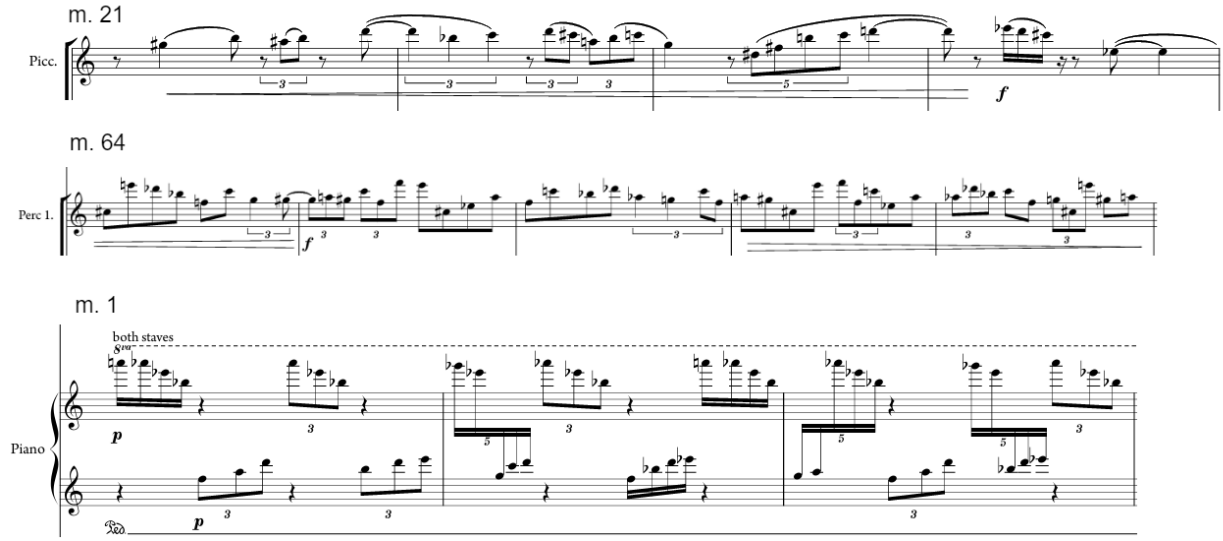
The exposition of *Breath, Contained III* opens with "quarter note = 112, 'Delightful Frenzy.'" No introduction is provided before the music dives straight into the P theme at m.1, characterized by swiping across multiple columns of small bubbles that produce a high-pitched rustling sound. Ko notates this gesture on a twelve-line staff--four lines for each size of small, medium, and large-sized bubbles, arranged from top to bottom, respectively.

The notation for this gesture consists of clustered noteheads that indicate the relative pitch while also signaling that the soloist should swipe laterally across multiple columns of bubbles. The passage is enclosed in a notational box that signals a slight degree of improvisatory freedom. A wavy extension line then directs the performer to continue in this fashion for the remainder of the section. Thus, the primary traits of the P theme are: the use of small bubbles, improvisatory freedom, and swiping across multiple columns of bubbles in a loose fashion. The notation for this theme is shown below in Example 27.



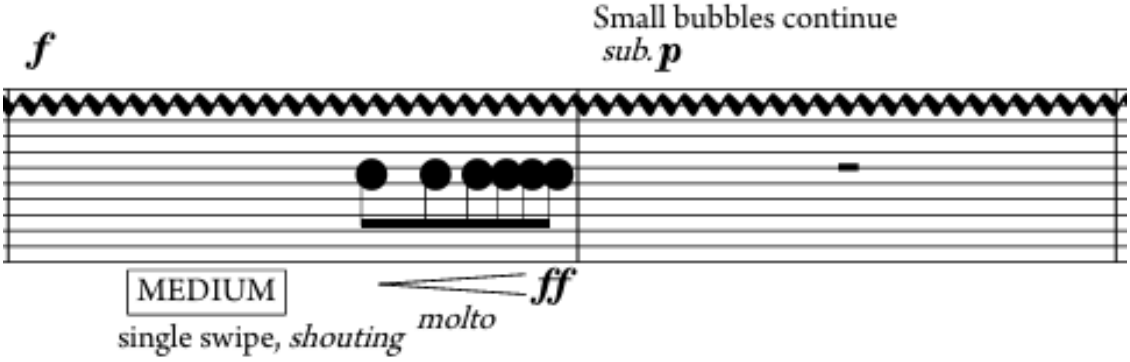
Ex. 27: P Theme in the exposition. Text reads "SMALL, *shrieking*." Squiggly lines tell the soloist to continue in this fashion, with improvisatory flexibility

Accompanying the P theme is a full orchestra texture that includes: flute, oboe, clarinet, tenor saxophone, bassoon, horn, trumpet, trombone, two percussion parts (block of polystyrene, tambourine, small suspended cymbal, snare drum, bass drum, woodblocks, large guiro, large suspended cymbal, and medium tom-tom), piano, 4 violins, 2 violas, 2 cellos, and 2 double basses. During this opening P theme, the strings accompany with staggered, "dry" pizzicatos while the flute plays a short, floating melody above the texture. The piano provides a countermelody, shown in Example 28 below. This musical figure is most recognizable by its rhythmic intricacy, moving rapidly between duple, triple, quadruple, and quintuple divisions of the beat. This makes it distinguishable even when it is picked up by other instruments like the piccolo and percussion (though it is most often played by the piano). During moments where the soloist rests (mm. 21-27, 47-49, and 65-70), this countermelody comes to the fore, creating a *solo* and *tutti* texture..



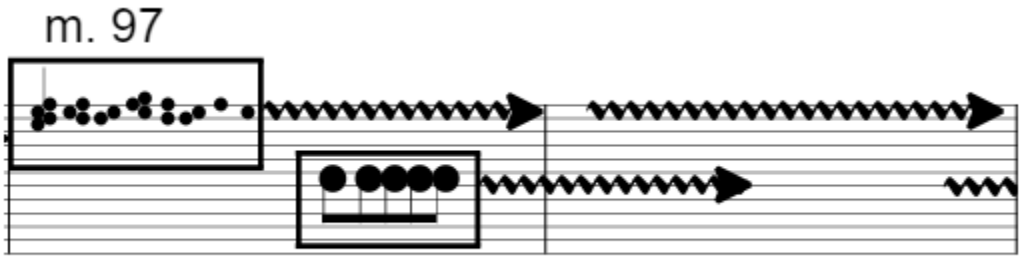
Ex. 28: Countermelodies in the piccolo, percussion, and piano, respectively

Following the P theme is a transition section (mm.73-112). This transition continues the loose swiping motion from P with occasional interjections of what we will find to be the first S theme: high-pressure squeaks on a singular column of medium-sized bubbles. Unlike the P theme, these gestures are not enclosed in a box and are instead written in loosely-measured eighth notes placed in proximity, indicating more rhythmic precision and less improvisatory freedom. Ko's notation is shown below in Example 29.



Ex. 29: Measure 73, the first interjection of the S-theme fragment. Eighth-note notation expresses approximate quickness of squeaks. Wavy lines at the top of the staff show the continuation of the loose improvisatory small bubble swiping.

At first, these interjections of S_1 appear sporadically within the ongoing small-bubble texture. As the transition continues, however, they occur with increasing frequency until the P and S_1 themes are regularly overlapping one another. As this continues, the improvisatory box over the medium-bubble swipes returns, indicating a prioritization of textural overlap over rhythmic precision. These oscillations between the small-bubble swipes and medium-bubble squeaks produce a sense of forward momentum that drives the music into the next section. Ko's arrow notation, shown in Example 30 below, instructs the performer to "lead toward" a goal, reinforcing this directional tension.



Ex. 30: mm. 97-98, showing Ko's arrow notation in the bubble wrap part

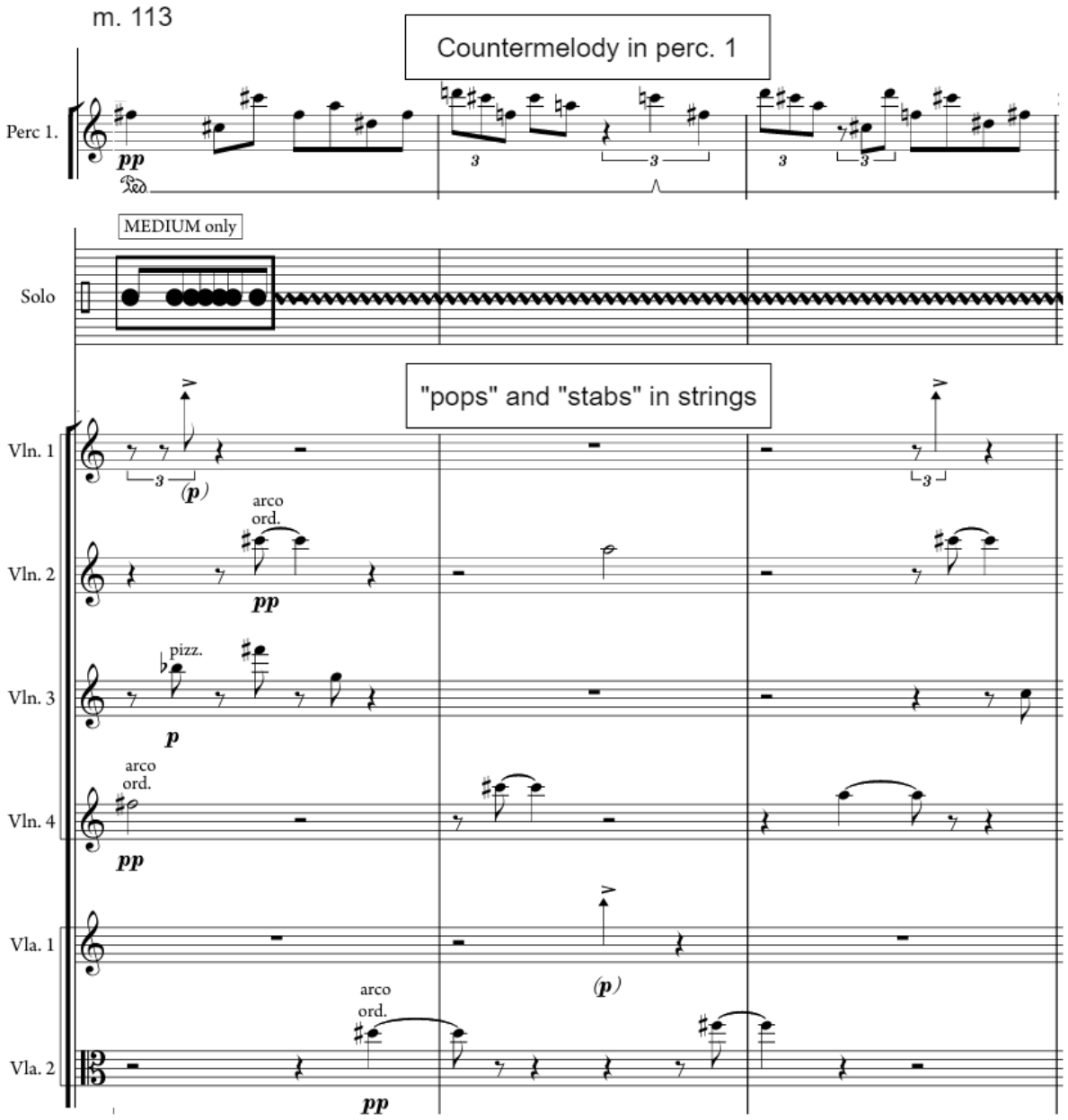
The official entrance of the first S theme (S_1) occurs at m.113, shown in Example 31. The lateral swiping on small-sized bubbles ceases and instead only the single-column, medium-sized bubble drags remain. This gesture creates a tighter, clickier, and more rhythmically articulated sound. Slight variation is created when these sets of swipes are placed on different rows within the middle 4 lines of the staff, suggesting that the soloist swipe on different columns of the bubble sheet. This change in playing technique, combined with the registral shift from high register to medium register, mark it as a primary structural event distinct from the initial P theme. While the P theme dispersed physical energy across multiple columns of small bubbles in a largely improvisatory flow, S_1 concentrates that physical effort into a single

vertical track. These contrasts can be seen as timbral analogues to the typical two-key P and S contrasts found within tonal sonatas.

The orchestral texture reinforces this contrast. Percussion 1 continues its countermelodic role on the vibraphone while the piano rests. Meanwhile, the strings pick up activity, creating staggered entrances of short tremolos, pizzicato, and percussive attacks. This creates an effect of constant sonic punctuation, almost like a turbulent surface of pops and stabs on top of which the soloist performs (perhaps foreshadowing the ending). The S_1 theme thus achieves contrast not only through the soloist's melody but through the orchestration and accompaniment.

A second S theme (S_2) (mm. 156-173) complicates this newly established opposition. Here in S_2, the solo part retains the medium-sized bubble register introduced in S_1 but returns to broad lateral swipes across multiple columns. The notation mirrors the dispersed clustering seen in the P theme, with noteheads spread across the four lines assigned to the medium register. At first glance, this may appear as a return to the P theme. However, several structural and notation features argue against such reading. One of which is the section label "Strange gusts of wind," markedly different in mood than the opening "Delightful frenzy." But, regardless of verbal characterization, these gestures are markedly different from the initial P theme statements in that they lack improvisatory freedom. The gestures (shown below in Example 32) are not contained within the box that would typically indicate that the soloist take liberties. Rather, the gestures stand alone and are segmented via intermittent rests, suggesting a sense of metric discipline. This, combined with the general crescendo and decrescendo shapes, emphasizes the overall shape of each gesture, which typically lasts 1-4 measures. In Example 32 below, the soloist starts with many columns of bubbles, then gradually diminishes to just a single column. By not offering the soloist any freedom of interpretation, Ko emphasizes the importance of these shapes

in characterizing this theme. S_2 therefore stands distinct from S_1 in its gestural and timbral profile, while also remaining distinct from P in its strictness.

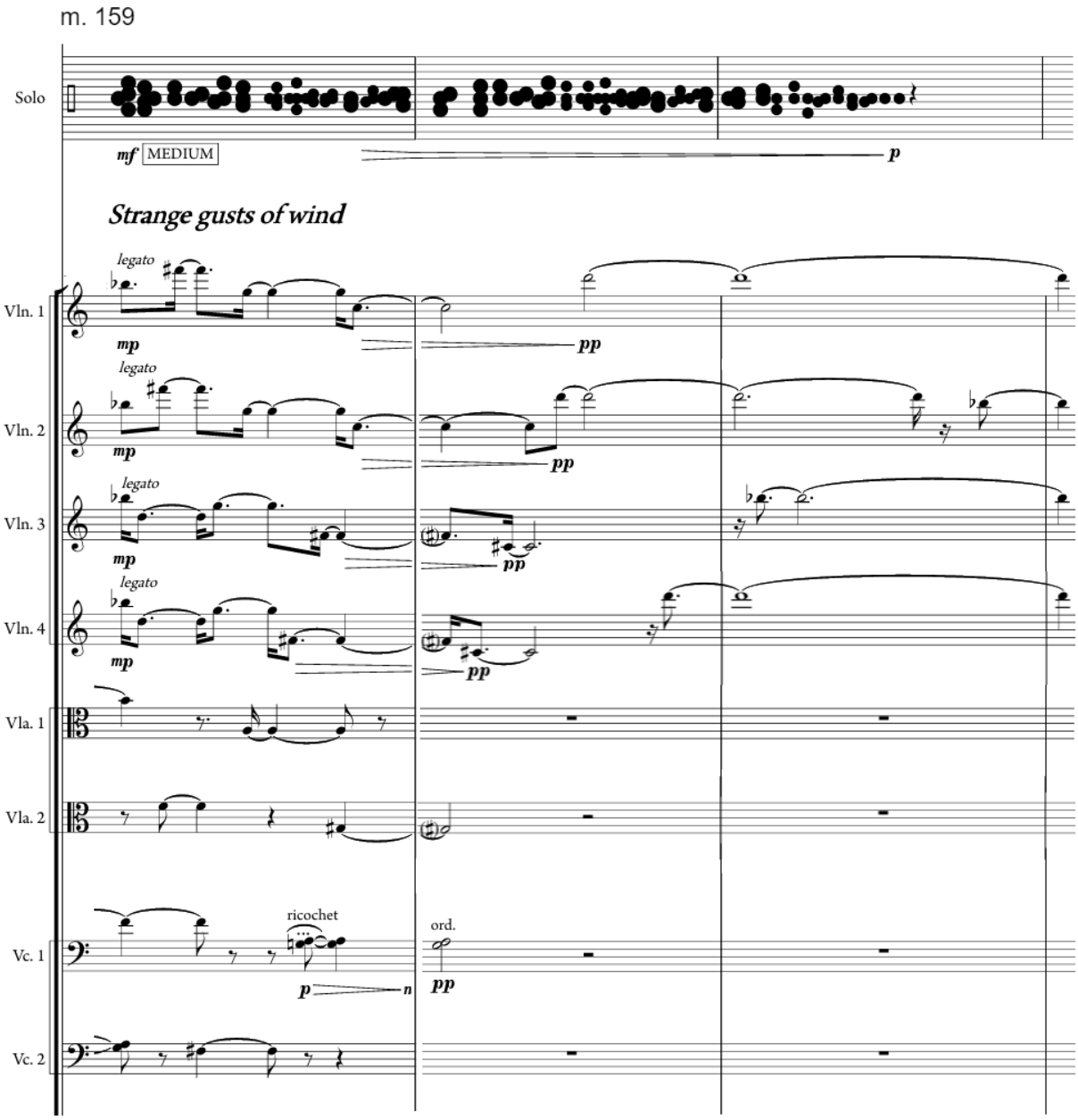


Ex. 31: m. 113, first statement of S1, with the countermelody in the percussion and “pops” and “stabs” in the strings

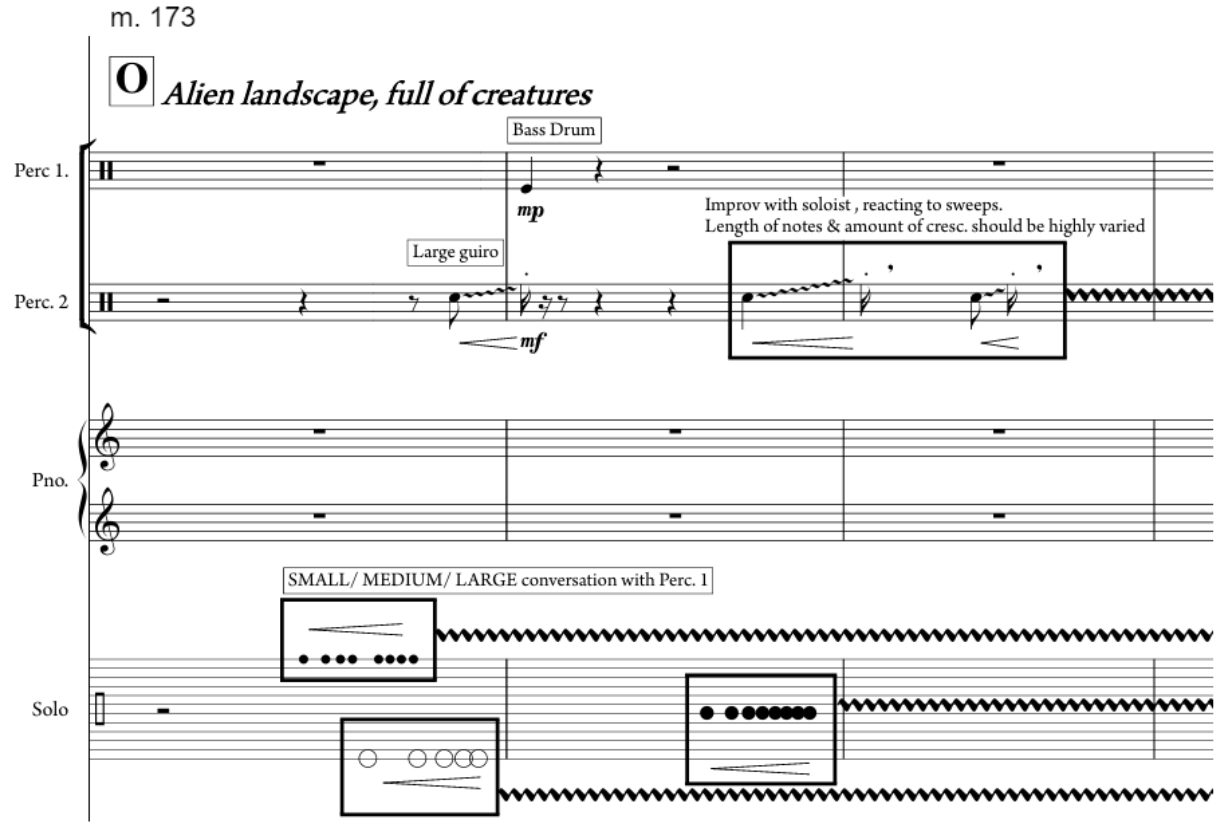
The closing theme (mm. 174-232) begins at Rehearsal O, labeled “Alien landscape, full of creatures.” This new section consolidates all the previous thematic materials by returning to the single-column clicking gesture of S_1, but distributed across all three bubble sizes, including the previously unheard large bubbles. This “polyphonic” texture suggests a new section. The interaction between the soloists and percussionists (who are instructed to react to the soloist’s sweeps, shown in Ex. 33 below) creates an unpredictable palette of rhythms and volumes, which in turn creates excitement and forward momentum. Through rehearsals O, P, and Q, the soloist and instrumentalists continue in this fashion, with the soloist at times playing on all three bubble sheets, or occasionally omitting one register of bubble sheets momentarily, creating slight registral contrast through the sections.

The closing theme continues to build tension into Rehearsal S (m. 211), titled “increasingly menacing and scrambled.” However, the texture moves away from the previous multi-register bubble usage to only the low bubbles. Throughout the section, the pulse gradually loosens, moving into unbeamed noteheads via Ko’s arrow notation at measure 216. This leads to Rehearsal T (m.218), shown in Example 34, where the rhythmic clarity of these spaced-out swipes collapses into loose, improvisatory swipes across all low bubbles.

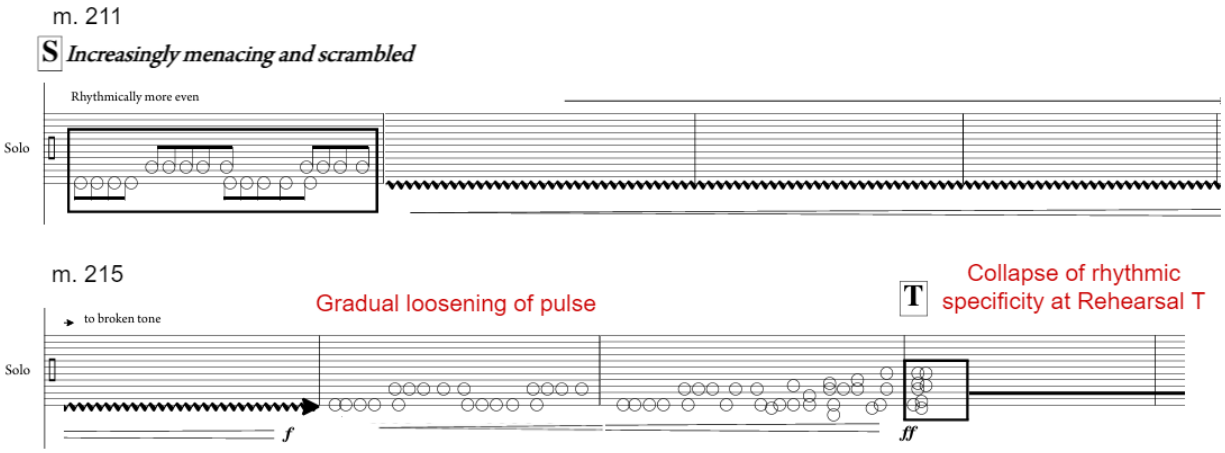
The final stage of this closing trajectory occurs at Rehearsal U (m. 226), titled “Night Calls.” Here, the instructions for the soloist call for a “sudden high tone,” with a new notational style utilizing beamed eighth notes across the low and medium-sized bubbles, intended to create a long, singular, high-pitched ring, shown below in Example 35. The high tones continue into Rehearsal V (m.233), led by Ko’s arrow notation, instructing the performer to lead into the double bar line at measure 238, which indicates the EEC and the end of the exposition.



Ex. 32: mm.159-161, showing the typical shape and phrasing of the S_2 theme

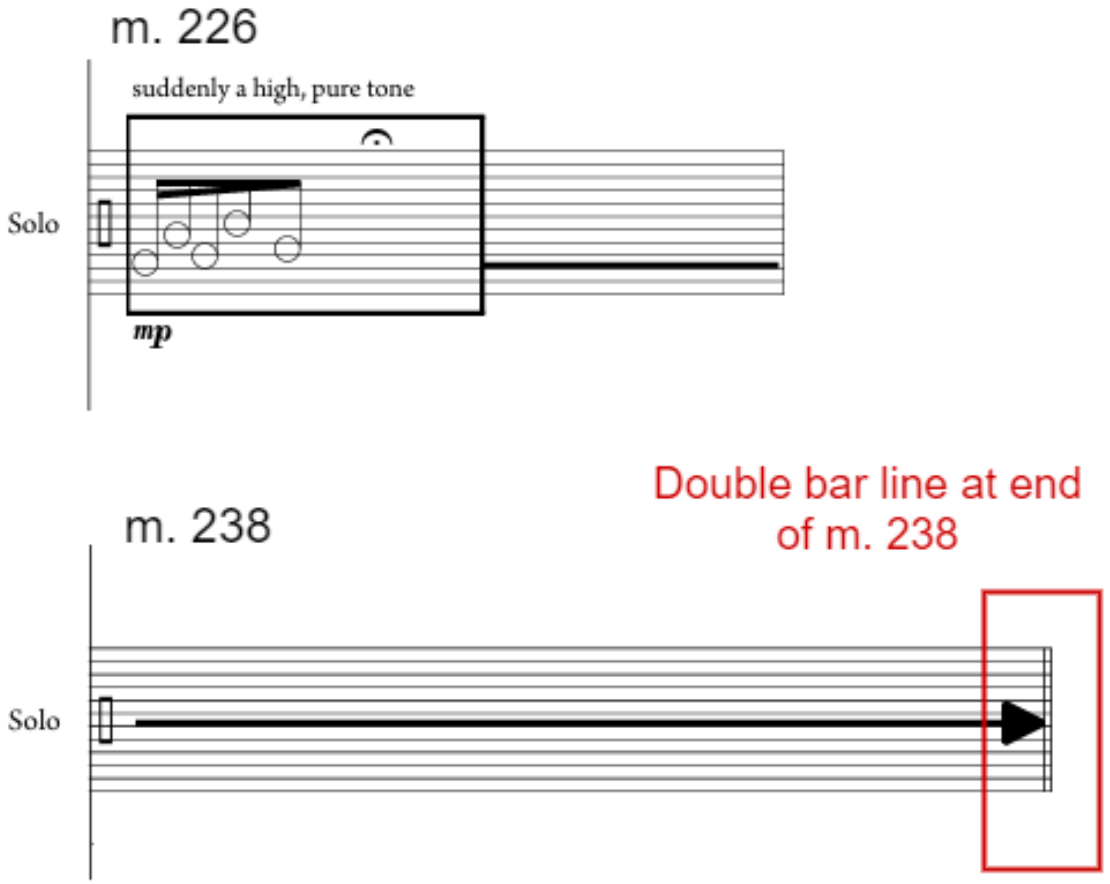


Ex. 33: Closing theme. Text in solo part reads “SMALL/MEDIUM/LARGE conversation with Perc. 1.” Text in percussion part reads “Improv with soloist, reacting to sweeps. Length of notes & amount of cresc. should be highly varied”

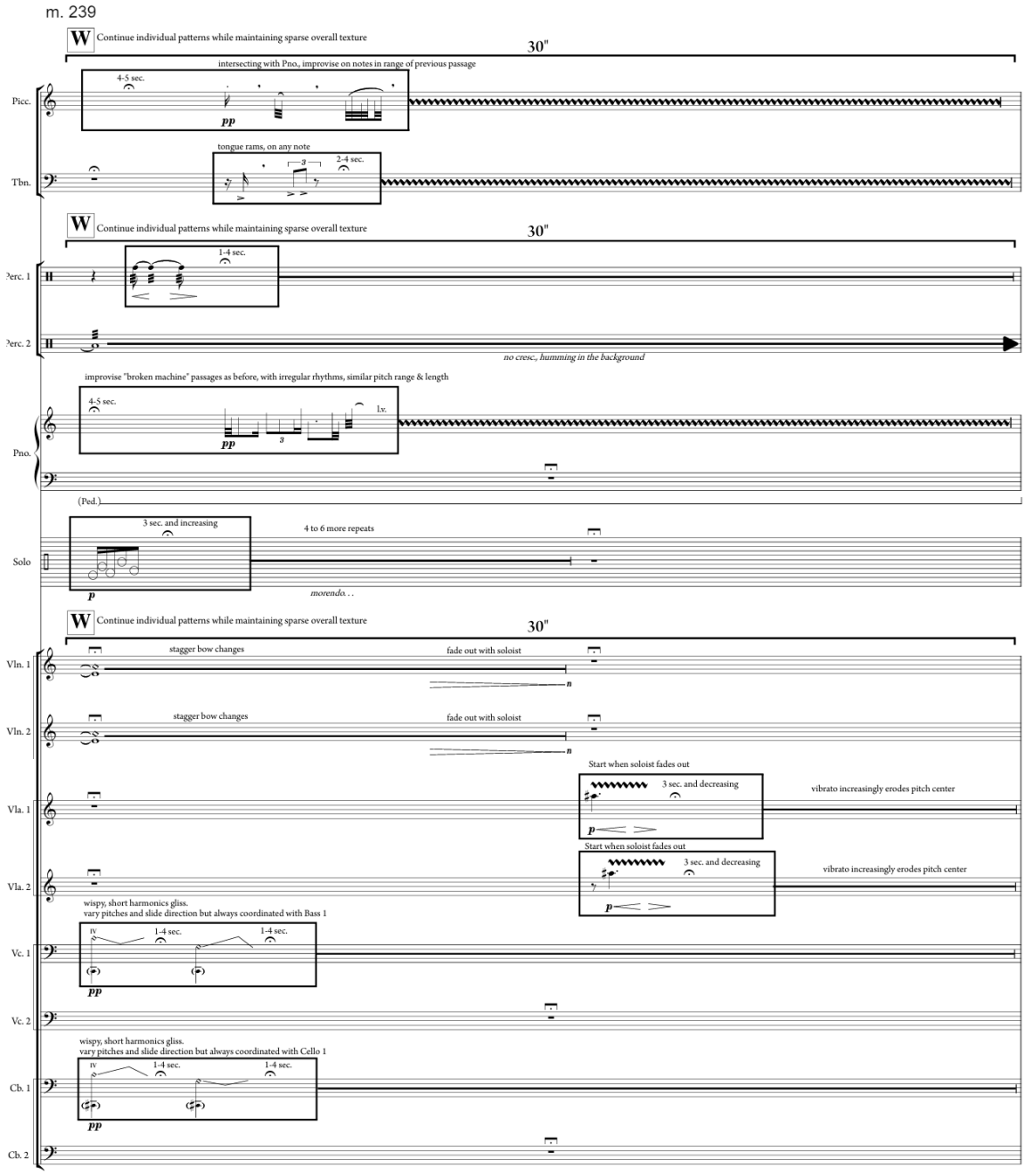


Ex. 34: mm. 211-218, showing the collapse of rhythmic precision between Rehearsals S and T

In this reading, the EEC is delineated primarily through the notational feature of the double bar line at the end of m. 238. However, further supporting this observation is the section immediately following this double bar line, Rehearsal W (m. 239). This section, which I argue functions as a Codetta, is a group-wide improvisation that uses time-based notation rather than metric notation. At this moment, the ensemble enters a 30-second window of loose, staggered improvisational dialogues, with each instrument (that isn't tacet) beginning and ending at different moments. This creates an exciting musical moment where all sounds are blurred into a collective sound-mass. This is shown below in Example 36.

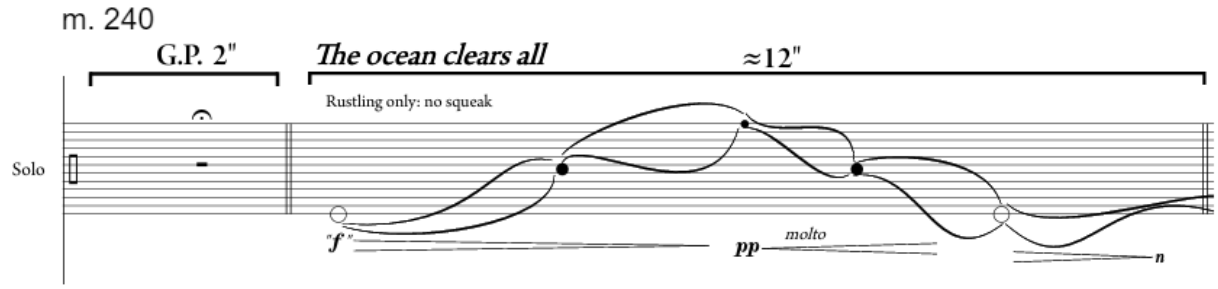


Example 35: m. 226 and m.238, showing the new beamed eighth note notation, which continues until the end of m. 238, where an arrow and double bar line suggest an EEC.



Ex. 36: Rehearsal W, m. 239, showing the staggered, improvisatory entrances of soloist and instruction following the double bar line in m. 238. Oboe, Clarinet, S. Sax., Bassoon, Horn, Trumpet, Vln. 3, Vln. 4, Cello 2, and Double Bass 2 are tacet.

This then leads to a 2-second GP at m. 240. Following this is a subsection of the Codetta titled “The ocean clears all,” a 12-second solo passage for bubble wrap, where the soloist follows the wild notation that indicates to swipe across all sheets of bubble wrap. This creates a whooshing, ocean-like white noise while the orchestra rests. As the name of the subsection suggests, this serves as a palate cleanser, clearing the tense residue of the exposition and aurally resetting the audience’s ears in preparation for the development. This passage is shown in Example 37. The entirety of this Codetta section only lasts three measures, highlighting its role as a formal buffer, and further affirming the previous EEC marked by the double bar line.



Ex. 37: mm.240-241, showing the 2-second GP before “The ocean clears all.” Text reads “Rustling only: no squeak.”

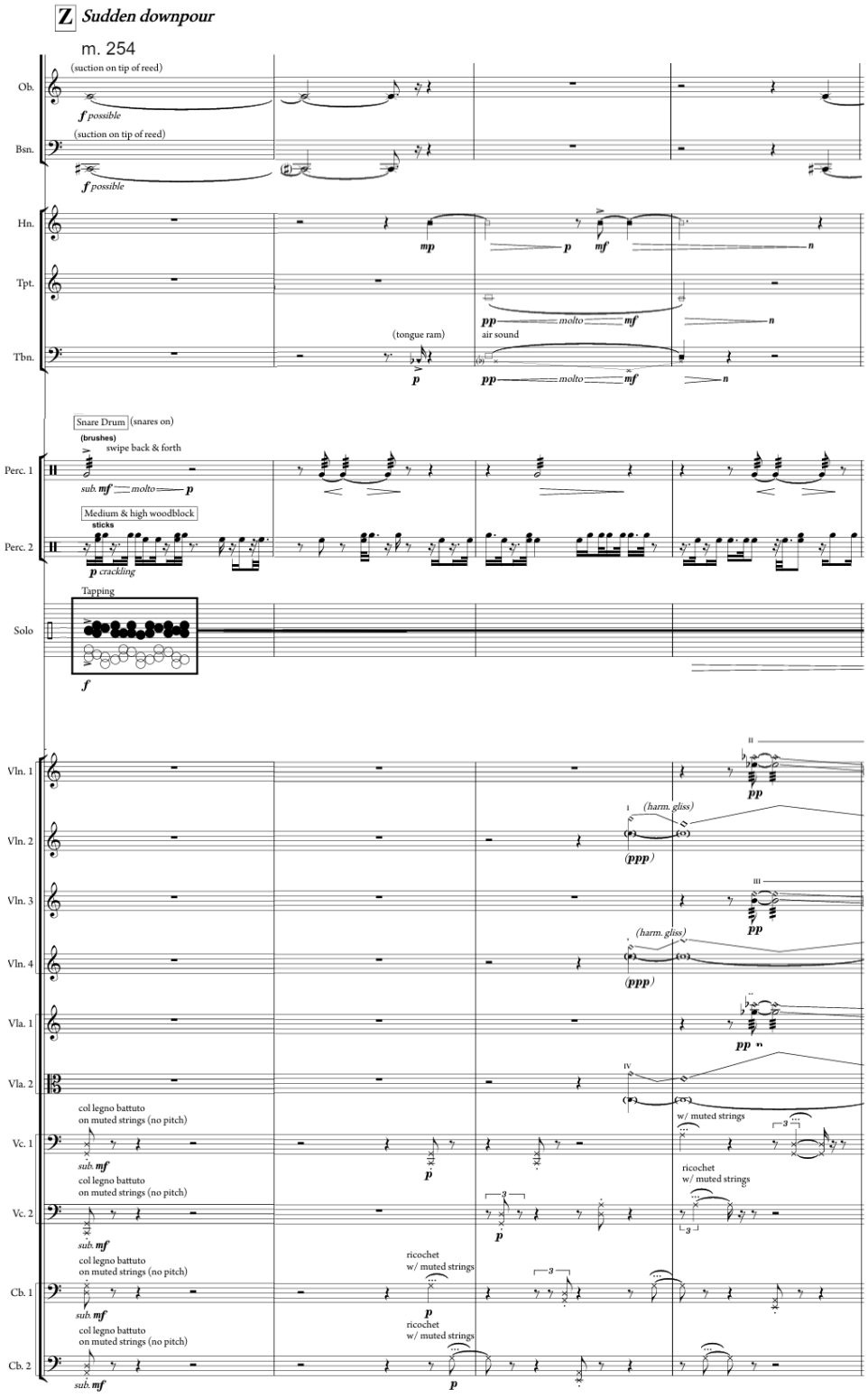
The Development officially commences at Rehearsal X (m.241). While the soloist continues in the fashion established by the previous subsection, the music returns to using measures and bpm to keep time rather than seconds. The “one-versus-many” dynamic of concertos is reestablished as the orchestra engages the *solo* and *tutti* texture again, playing mostly during moments where the soloist rests.

Traditional developments in sonata form typically explore keys outside of the two tonal areas established in the exposition, taking motives from both themes and modifying them in numerous ways. However, this work, lacking in tonality, develops its musical ideas through expansion of the timbral vocabulary of the bubble wrap itself. Here, the soloist explores a series

of previously unheard techniques, each producing distinct musical identities that are then integrated with the surrounding orchestral textures.

At Rehearsal Z (m. 255), titled “sudden downpour,” Ko introduces the first of several new playing techniques. Here, the soloist lightly taps on the medium and large bubbles in quick succession, producing a rustling texture that evokes the section’s title. The verticality in this gesture is markedly different from the horizontal swiping that has dictated much of the piece thus far, expanding Ko’s playing techniques into a new physical direction. Accompanying these taps, the string players perform *col legno*, while woodwinds are instructed to create a suction effect by drawing on the tips of their reeds. These details are shown below in Example 38.

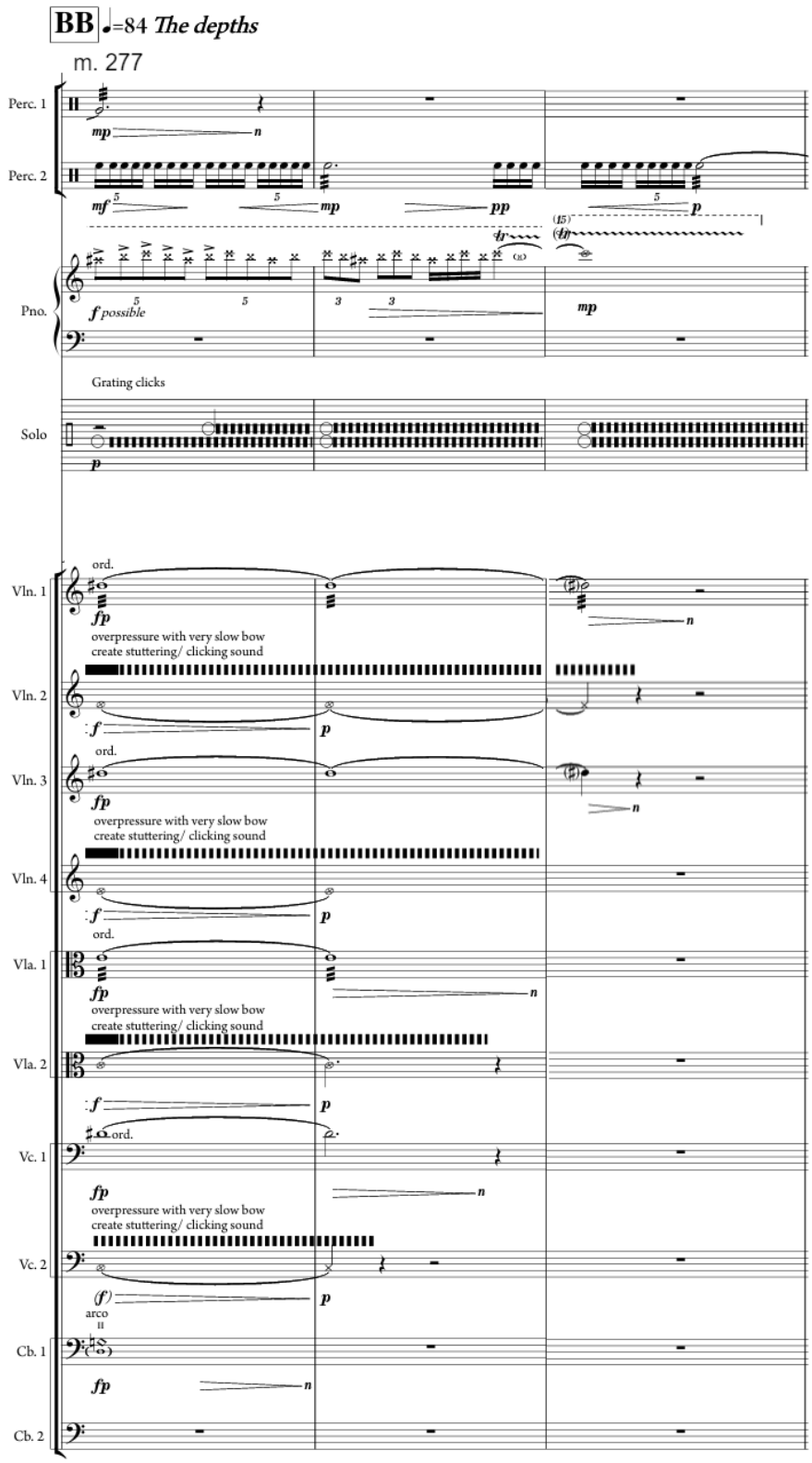
These choices can be read in relation to Ko’s use of ORCHIDEA (table shown earlier in Step 1, Ex. 19), which she used to help orchestrate instrumental analogues to her bubble wrap sounds. Certain techniques, such as the use of *col legno* and occasional flutter tonguing from the trumpet are high-fidelity mimics of the plastic’s acoustic profile. However, by utilizing sounds not derived from ORCHIDEA, like the woodwind suction effects and string glissando harmonics, Ko extends beyond the mimesis between soloist and orchestra. In the context of a development section, these non-imitative sounds provide the necessary timbral friction to give the work tension and push the section forward.



Ex. 38: Rehearsal Z, “Sudden Downpour.” Oboe and Bassoon instructions read “suction on tip of reed,” lower string instructions read “col legno battuto on muted strings (no pitch)”

A more striking musical event occurs at rehearsal BB (m.277), titled “The Depths.” Here, the soloist introduces yet another new playing technique where she presses then drags on the bubbles with intense force to produce harsh, grating clicks. Ko’s use of extended techniques to blend the orchestra with the bubble wrap is especially evident in this section. The abrasive sound of the bubble wrap grates is mirrored in the strings’ overpressure bowing that produces similar clicking sounds. Within this texture, the prepared piano recalls the countermelody from the exposition. Here, the instrument is prepared via poster tack on the three highest pitches, transforming the notes into pitch-less thuds. As a result, the return of this countermelodic material is mostly perceptible through its rhythmic profile and loose contour rather than its original pitch content. The notations for these gestures are shown below in Example 39.

This grating texture continues from rehearsal BB (m. 277) to the end of GG (m. 329). In the next section, rehearsal HH (m.330), the bubble wrap part begins to release tension as the gesture dissolves into one where the soloist gradually releases the pressure on the bubbles as they swipe. This is shown below in Example 40. The ensemble follows suit, slowly abandoning the abrasive sounds for smoother ones. The strings cease the overpressure on their strings and instead perform sustained tremolos. Similarly, the piano moves away from its prepared register, reintroducing pitch to its countermelodic role, making it now fully perceptible to the audience. Additionally, the upper woodwinds and brass engage in a back-and-forth with the piano, stating rhythmically complex figures that resemble the contour of the piano’s countermelody.

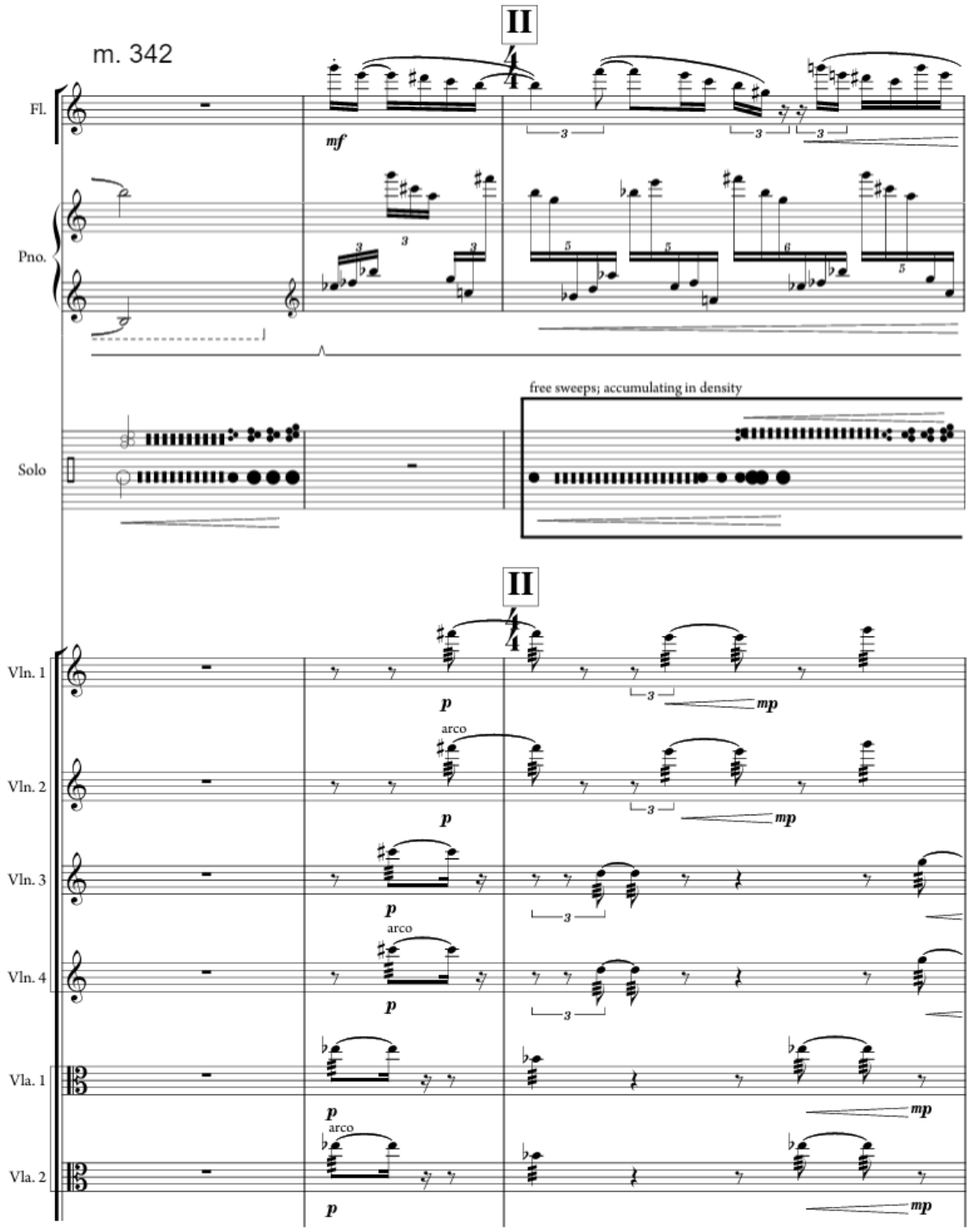


Ex. 39: mm.277-279 “The Depths,” strings text reads “overpressure with very slow bow create stuttering/clicking sound.”

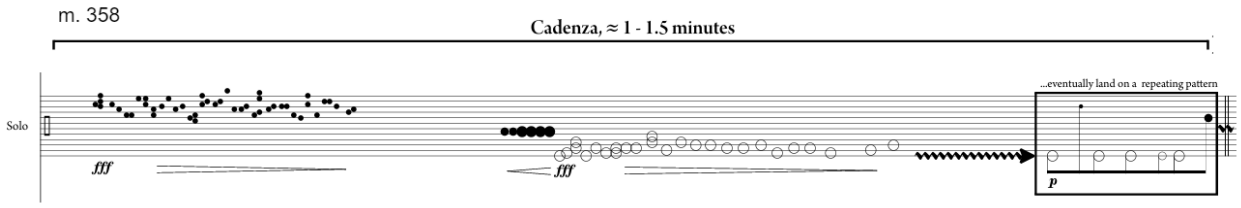
At Rehearsal I I (m. 344), Ko's boxed notation reappears in both the solo part and the ensemble. This looser approach recalls the earlier flexibility of the exposition but is particularly notable in how the instruments are invited to do short improvisations with the soloist. This freestyle texture continues into m. 357, where a double bar line marks the end of the body of the development.

Following the body of the development is a cadenza (m. 358, shown in Example 41). This section, lasting one written measure and approximately 60-90 seconds of real time, provides a space to review previous gestural modules of the work in a freer manner. Here, this cadenza acts as a thematic summarization, beginning with the horizontal swiping on small bubbles associated with the P-theme, followed by tight clicks on medium-sized bubbles from S_1. The cadenza ends with a loop of clicks on small and large bubbles that serve as a non-verbal cue for the conductor to resume the music.

The cadenza prepares the audience for the recapitulation. Once the soloist established a looping pattern, the orchestra reenters the texture, initiating a build-up of excitement through a series of unison pitch-class G's, gradually increasing speed and rhythmic activity as the music accelerates towards rehearsal LL. This functions as a retransition analogous to traditional sonatas where tension would be built back to the tonic key for the recapitulation.



Ex. 40: mm.342-345, showing the transition from the gestures in Rehearsal HH to the ones in Rehearsal I I



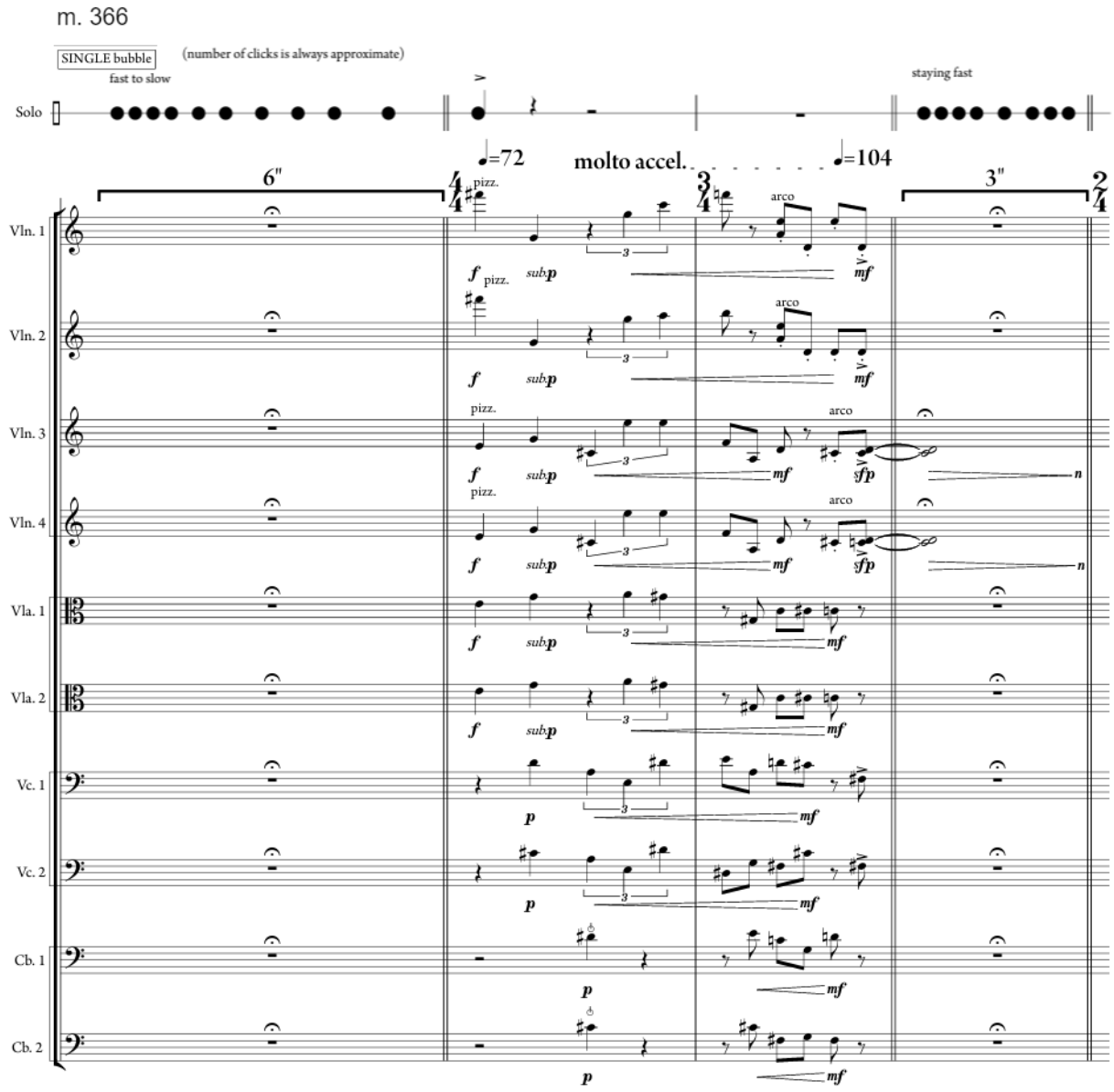
Ex. 41: Solo cadenza, featuring a brief summary of the previous thematic modules before establishing a looping pattern (shown in the box) at the end.

However, there is no "tonic key" for this work, therefore begging the question as to how a non-tonal work can create such psychologically satisfying symmetry. Ko's answer to this question is to subvert the recapitulation entirely. Once the music arrives at rehearsal LL, Ko denies the listener the expected return to the opening. Rather than reintroducing the P or S themes in recognizable form, Ko instead abandons the 3 sheets of bubble wrap entirely and switches to a singular bubble, collapsing the twelve-line notational staff into a singular line. This transition is shown in Example 42. In doing so, Ko effectively de-scales the work's thematic identity at the very moment it should be the most expansive.

Even the work's dialogic *solo* and *tutti* texture is altered in this subversion. While the orchestral material is measured in traditional metric time, the soloist's gestures are instead timed in seconds, occupying the space of a single measure but unfolding over the course of 3-9 seconds. This draws even more attention to the switch to the single bubble as its speaking moments are sandwiched between moments of full orchestration.

This complicates any reading of this passage as a true recapitulation. Rather than restoring the exposition's themes and timbral contrasts, Ko surprises the audience by demonstrating the musical possibilities of a single bubble. In doing so, this new section (section

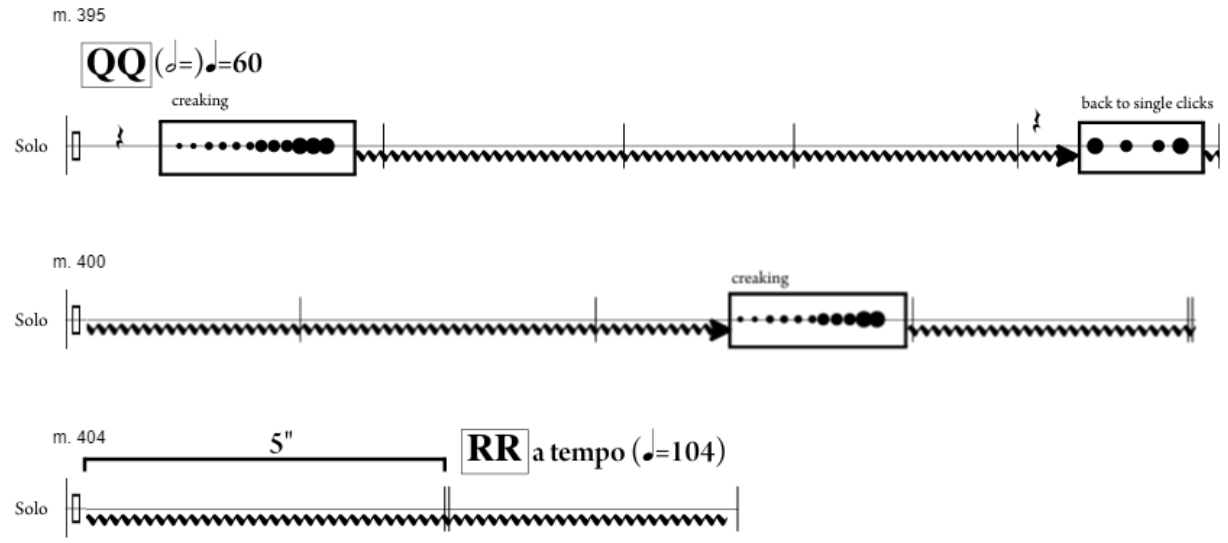
C) occupies the formal position of a recapitulation but declines the thematic function and tonal symmetry.



Ex. 42: "Recapitulation," showing the alternations between metric and time-based notation for the orchestra and solo part, respectively

Rehearsal QQ (m. 395) marks a new section characterized by a new playing style. The single bubble part presents several measures of "creaks" followed by several measures of "single

clicks." This seems to recall the S1 theme, however it was not preceded by a restatement of the P theme, and as we will see momentarily, it is not followed by a restatement of S2. Ko's boxes and wavy lines return, indicating localized improvisatory freedom within each gesture type, shown below in Example 43. While metric normalcy returns, the soloist is given one more five-second-long moment to improv while the orchestra remains tacet in the measure before rehearsal RR (m. 405).



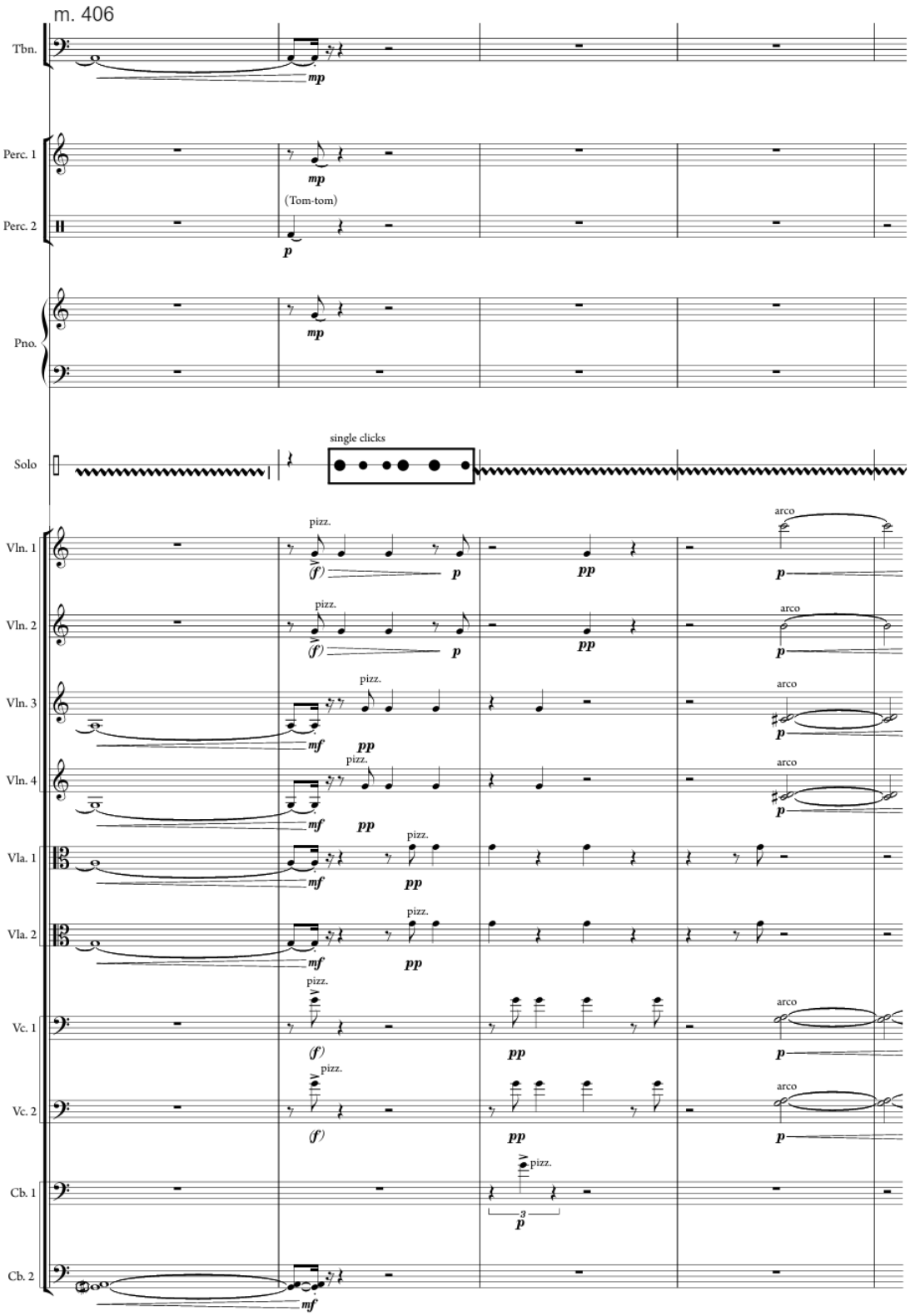
Ex. 43: Solo bubble wrap part for mm. 395-405 (rehearsals QQ-RR), showing the alternating "creaking" and "back to single clicks" texture, with a 5" improv section before rehearsal RR

At rehearsal RR, the introduction of a new "squeeze and sweep" (shown below in Example 44) gesture marks yet another significant departure from sonata form conventions. In a traditional recapitulation, the music summarizes and resolves previous tonal and thematic material. Yet, here, Ko introduces a new playing technique not yet heard in the exposition nor the development. This further weakens any support for this section serving as a recapitulation.

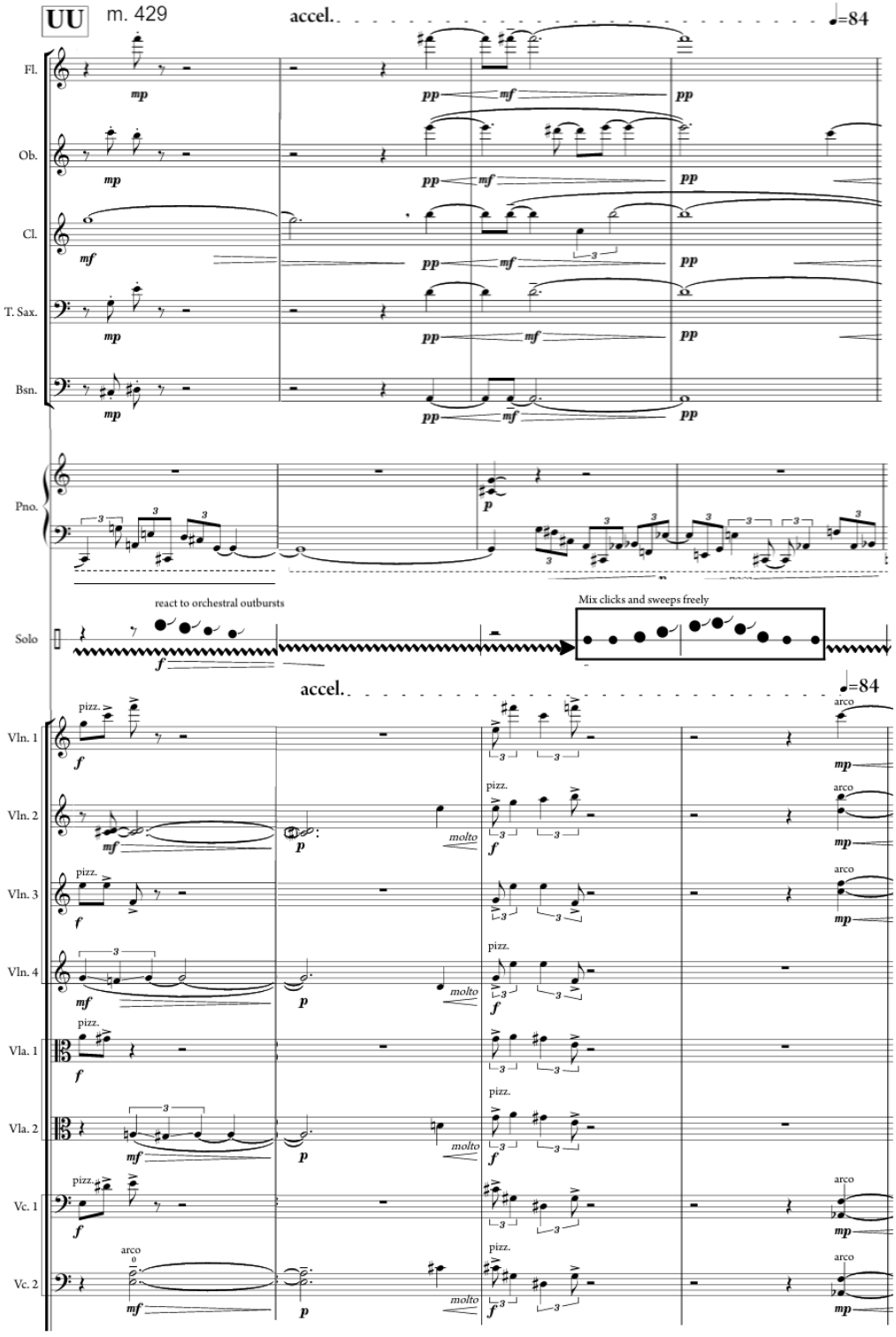
The orchestral writing further reinforces this formal diversion. Unlike earlier sections, especially the development, where extended techniques and timbral blending played an essential

role in creating musical momentum, the accompaniment here recedes into a mostly supportive function. The piano's countermelodic material, initially prominent in the exposition, is notably absent. More broadly, the ensemble avoids the kind of timbral experimentation heard in the development, instead providing a relatively neutral backdrop on a singular pitch that allows the quiet sound of the single bubble to remain foregrounded.

Beginning at rehearsal TT ("Suddenly gentle and withdrawn"), the "squeeze and sweep" gesture occurs more frequently while the orchestral texture gradually reasserts itself. Fragments of the piano's countermelody reemerge in the left hand at a *pianissimo*, *sotto voce* dynamic, reflecting the title of the section. The whole ensemble performs at *piano* and *pianissimo* dynamics, with some instruments approaching pitchlessness. This is in direct contrast to the subsequent section, rehearsal UU, where the ensemble begins to punctuate the texture with intermittent *forte* "outbursts." This moment is shown below in Example 45. The soloist is instructed to "react to orchestral outbursts." This type of exchange recalls the back-and-forth between the soloist and percussionists from the closing section of the exposition. However, this symmetry is insufficient to constitute a recapitulation. In fact, the mapping of this familiar call-and-response with the newly diminished singular bubble makes the subversion of this recapitulation even more apparent. While the dialogic parts of the exposition are evoked, the thematic context has been removed entirely.



Ex. 44: mm. 406-410, showing the sparse orchestration on the pitch G accompanying the single bubble

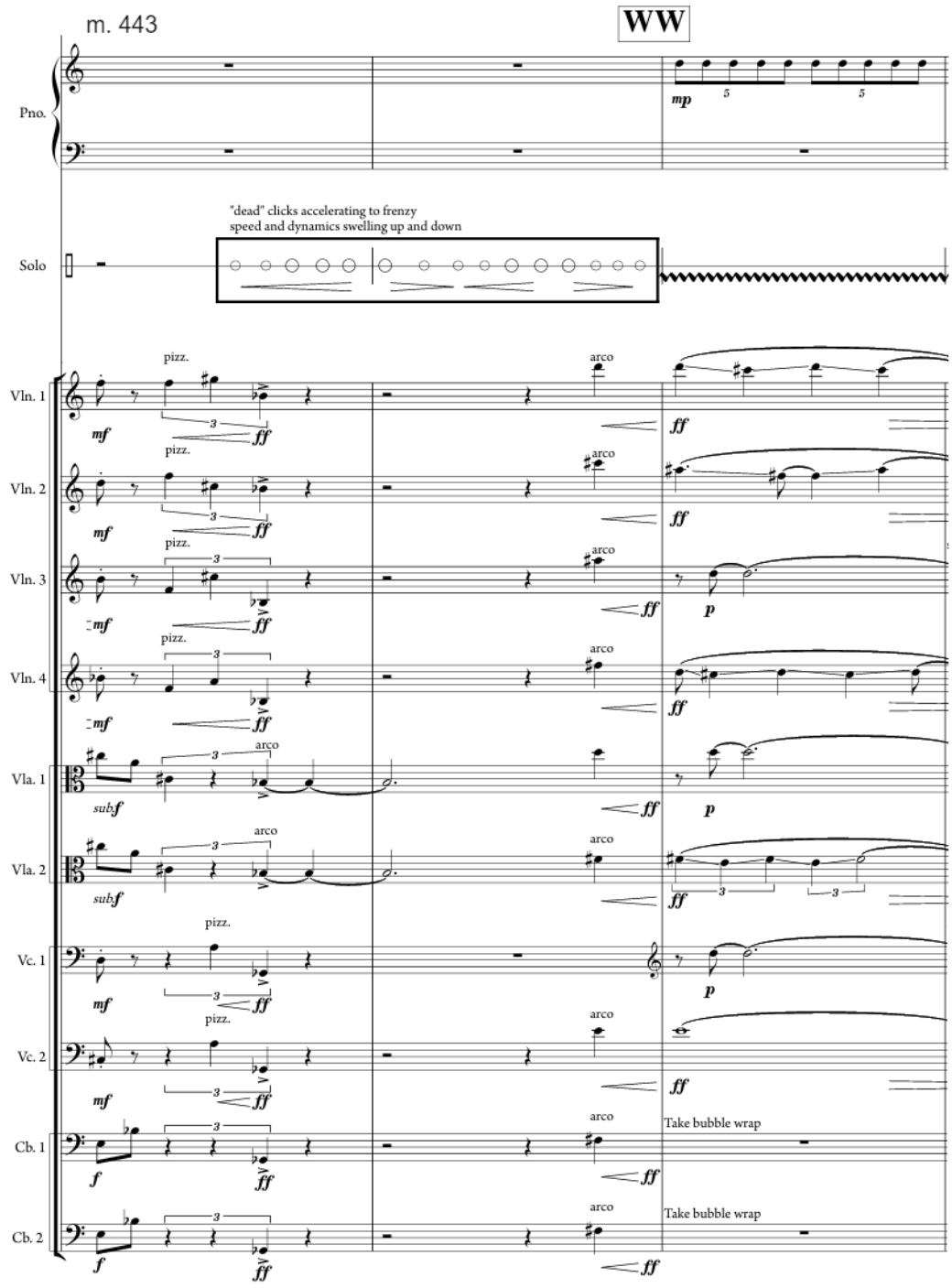


Ex. 45: Rehearsal UU, mm. 429-432, soloist's text reads "react to orchestral outbursts" and "Mix clicks and sweeps freely." Noteheads with curved "tails" indicate the "squeeze and sweep" gesture

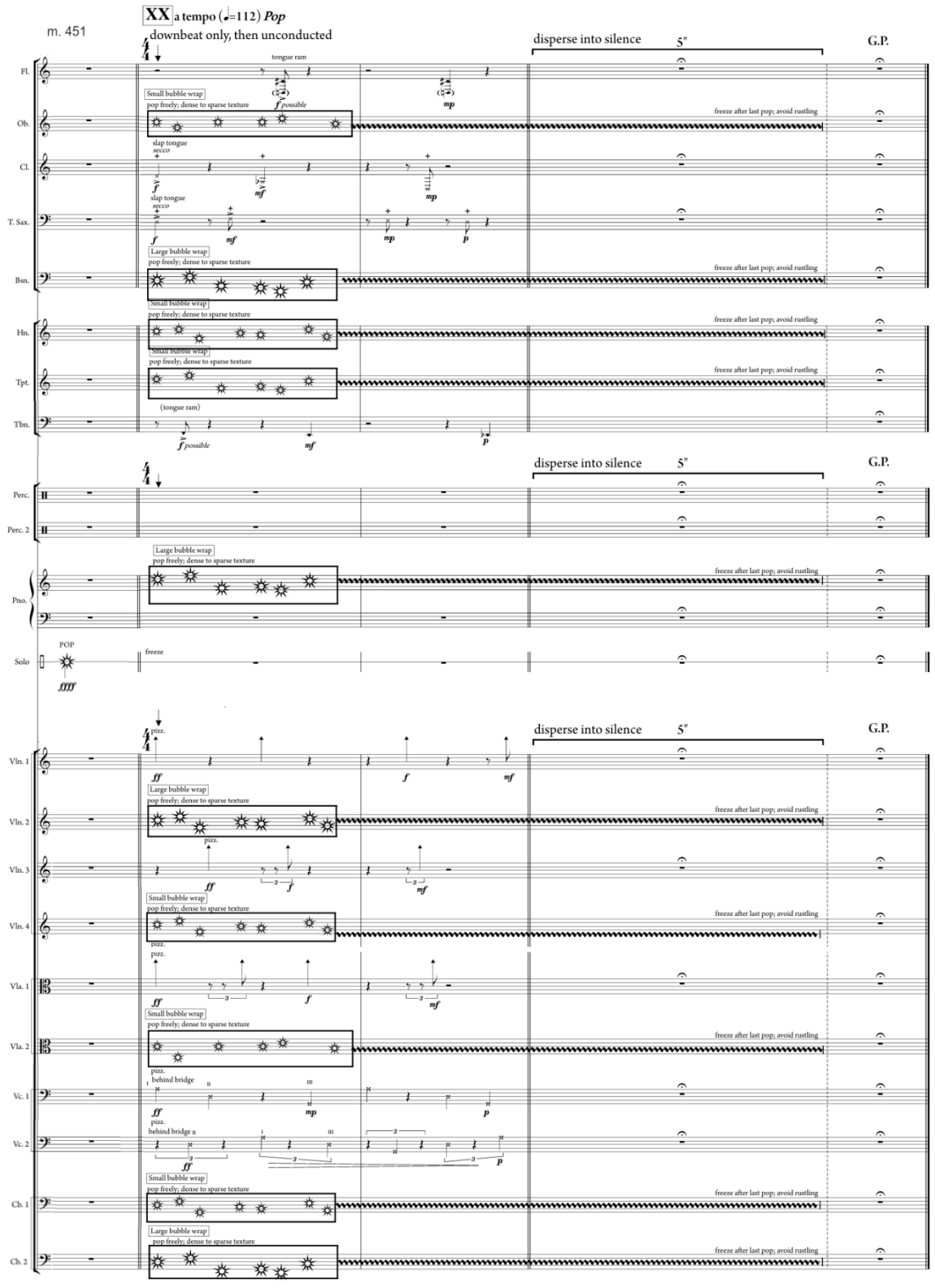
This tension continues to build into rehearsal VV, titled “bursting at the seams.” Here, the orchestral outbursts grow even wilder, with *fortissimo* attacks and stark crescendos appearing across the ensemble. The soloist continues to respond to these outbursts, however she does so while transitioning into “dead clicks.” This gesture, notated with open noteheads, is a quieter rustle that projects with a less sharp attack point. The transition to this gesture suggests that the “one-versus-many” dynamic of the concerto is perhaps overwhelming the soloist’s part. By rehearsal WW, these dead clicks come to dominate the solo part entirely, still with an improvisatory approach. Simultaneously, several instrumentalists are instructed to take up sheets of bubble wrap. The remaining instruments sustain long tones, colored by half-step glissandi in the strings, while the pianists and percussionists perform rhythmically rapid single-note figures, building excitement towards the end of the work. This is shown below in Example 46.

All of these musical elements build up and come together for the ultimate climax of the work at measure 451. Following a double bar line, the soloist performs a final, irreversible musical act: she pops the single bubble. This moment is shown in Example 47. In this reimagined sonata form, this popping moment functions as an ESC. Just as a traditional ESC provides a final tonal resolution, this pop offers a release of all the accumulated musical tension gathered thus far.

However, this pop is not the end of the piece. In the next passage, the members of the ensemble that have their own sheets of bubble wrap follow the soloist, staggering their pops in quick succession, reaffirming this closure in a light-hearted way. The work concludes with a final measure of complete silence (G.P.), in which the ensemble remains suspended following the last pop. With the instrumentalists frozen in stillness and the silence hanging heavy in the air, the work finally closes.



Ex. 46: mm. 443-445 and rehearsal WW. Soloist's text reads "'dead' clicks accelerating to frenzy speed and dynamics swelling up and down." Double bass 1 and 2 text reads "Take bubble wrap."



Ex. 47: mm. 451-end. Soloist pops first, then some instrumentalists follow suit, dispersing into silence and suspending in a G.P. until the end

When questioning why Ko would subvert a recapitulation—or any sense of a formal return—perhaps this conclusion offers a possible explanation. By withholding the thematic restatements and instead redirecting attention to a singular bubble, Ko draws the audience's attention towards the physical properties of the plastic bubble. As the ensemble begins to overwhelm the soloist, the fragility of the bubble is made even more perceptually visible. For the listener, this creates a material expectation, an "itch" for the one gesture most fundamentally associated with the object--the pop. Consequently, when the pop finally arrives, it serves as a cathartic release, similar to the kind achieved through tonal symmetry and closure in sonata form. This release is made all the more potent (and playful) when the orchestra follows. Finally, at the end of a long three-part work, the bubble is finally popped.

Step 5 – Interpretation, *Breath, Contained III*

The analysis in Step 4 demonstrates how *Breath, Contained III* constructs musical form through transformations of timbre, gesture, and ensemble interaction. To interpret these findings, I return to the three guiding questions I designed in the introduction to step 4: "How do the material constraints of bubble wrap (its transparency and pitchlessness) determine what becomes musically possible? How do gesture and performer interactions function as structural parameters? How do playful, subversive and careful treatments of the material manipulate expectations and redefine musical outcomes?" Through an exploration of these parameters, I find that *Breath, Contained III* achieves its satisfying subversive form through the exact material restraints of the plastic, the shifting relationships between performers, and a manipulation of expectation that culminates in a materially grounded sense of closure.

How do the material constraints of bubble wrap (its transparency and pitchlessness) determine what becomes musically possible?

As explored in step 1, Ko was particularly drawn to bubble wrap because of its visual and auditory transparency. In the same way that one can see through the material due to its clarity, one can determine the kinds of physical actions enacted on the material based on its timbre. In other words, the soft rustling of "the ocean clears all" elicits a mental image of gentle swiping even without watching the soloist perform this action. However, the transparency and pitchlessness of bubble wrap constrain the range of possible musical materials, especially when evoking a traditional genre that relies heavily on pitch and harmony to create contrast and symmetry. Without these aspects to organize her music, Ko creates distinctions through physical actions and gestures such as swiping versus tapping, dispersed versus concentrated pressure, and continuous versus segmented motion.

In the exposition, Ko's musical figures function analogously to sonata themes even without references to key and modality. To begin with, the P theme relies on large swipes across multiple columns of small bubbles that produce a relatively high-frequency rustling sound. In addition to this, the soloist is given creative freedom to swipe as they please (indicated by her notational boxes around the musical figures.) Meanwhile, S_1 focuses physical energy into swipes along single columns of medium-sized bubbles. Therefore, contrast between P and S_1 is created through both bubble register and concentration of physical energy. S_2 provides yet another angle of contrast. It reintroduces lateral motion like the P theme but under stricter rhythmic and metric control, foregoing improvisatory freedom in exchange for emphasis on shaped and dynamic figures. Thus, in the absence of pitch and harmony, Ko's physical interactions with bubble wrap become the primary means of creating distinct and contrasting musical material.

This manipulation of tonal expectations continues into the development. Here, typical sonata forms use modulations, fragmentations, and transformations of the exposition's P and S

themes to create variation and forward momentum. Ko mirrors this in her own work by introducing new, previously unheard techniques such as tapping and grating. While harmonic transformation may be possible in the orchestration, it is not a musical quality afforded to the bubble wrap. However, Ko utilizes this to her advantage to expand the work by exploring additional modes of contact with the material. Therefore, Ko redefines the role of the development to reveal even more sonic possibilities of the object.

In a typical sonata, the recapitulation restates the themes from the exposition, but without modulating to a secondary key, thereby creating a psychologically satisfying symmetry and sense of tonal closure. However, Ko disrupts this logic entirely with her C section. Yet, despite this departure, the work manages to nonetheless create a satisfying conclusion, in large part due to how Ko manipulates tension and expectations surrounding the bubble wrap itself. In this new C section, rather than restating the P and S materials, Ko reduces the instrument itself, exchanging the three sheets of bubble wrap for a single bubble.

This reduction can be understood as a reversal of the work's earlier expansive logic. The exposition and development of the work progress via an enlargement of possible interactions with the bubble wrap, moving towards grainier and abrasive textures. The subverted recapitulation redirects this trajectory by distilling the material essence of the bubble wrap to its most minimal form—a single bubble—in preparation for the expected and thus "cadential" pop. In doing this, Ko restricts many of the work's earlier timbral possibilities, including swiping across multiple columns and changing bubble size. Her palette of musical sounds is now restricted to a very limited set of possibilities, including clicks (and "dead" clicks), sweeps, and ultimately the pop itself.

So, in the absence of thematic return and in the drastic diminishing of musical possibilities, the question remains as to how this new, constrained version of the musical object can contribute to the form and ultimately lead towards a conclusion. The answer lies in the miniscule. Even in this distilled state, the material affords variation through degrees of pressure (clicks versus dead clicks versus "squeeze and sweeps"). This reduction focuses the listener's attention onto the bubble's capacity to pop, generating a kind of anticipation surrounding a potential event that is ultimately fulfilled at the end of the work (similar to a final cadence). The large-scale trajectory of the work can therefore be understood as a movement from multiplicity to singularity, culminating in the eventual pop. The expected symmetry of sonata form is thus preserved at the level of function, even as it is transformed at the level of material.

Additionally, the material limitations of bubble wrap are also reflected in the orchestral writing. When designing the work, Ko used ORCHIDEA to generate instrumental analogues to bubble wrap sounds, which she then organized into a large table (Ex. 19 from step 1). The orchestra, therefore, is also somewhat influenced by the same limitations as the soloist. However, crucially, Ko's aim is not to have the orchestra purely imitate the bubble wrap. While some orchestral techniques (such as *col legno*, overpressure bowing and flutter tonguing) closely approximate the sound of the bubble wrap, others diverge from it. Ko will, at times, use sounds not derived from ORCHIDEA in her orchestration, showing how she manipulates moments of timbral cohesion with moments of contrast, generating tension and contrast within the texture even in the absence of harmonic progression.

Altogether, the material affordances and limitations of bubble wrap can be observed at multiple structural levels. They determine not only the kinds of gestures available to the soloist, but also the orchestral palette and the large-scale formal trajectory of the work.

How do gesture and performer interactions function as structural parameters?

I turn now to my second question: How do gesture and performer interactions function as structural parameters? As observed above, the material constraints define the available musical vocabulary, but performer interactions further explain how that vocabulary is organized into a cohesive, yet subverted, sonata form. These interactional dynamics are not always perceptible to the listener, but they nonetheless function underneath the surface of the music as a structural layer that shapes the flow of who leads and who responds.

Ko establishes an array of interactional modes that define the work's initial relational dynamics in the exposition. The P theme begins by granting the soloist a high degree of interpretive autonomy through box-and-wavy-line notation which, in turn, relegates the orchestra to a supportive role, with the countermelody serving a tertiary function outside of that support. The S_1 theme transforms this into a more balanced, reciprocal exchange via explicit reactive instructions such as "respond to call" and "stop responding to call." The instructions are intentionally left vague and the "call" not defined by the score, thus the soloist must use their intuition to aurally scan the ensemble and identify a caller, the result of which can vary between performances. This creates somewhat of a relational inversion. Previously, the soloist was leading while the ensemble followed, but these directions force the soloist to listen within the ensemble, overturning the expectation that the soloist always dictates musical flow. The closing theme continues to develop this dynamic relationship as percussion 2 is granted interpretive freedom through their instructions to "improv with soloist, reacting to sweeps. Length of notes & amount of cresc. should be highly varied." This elevates the percussion 2 part to the same level of creative autonomy as the soloist as they engage in this duet. By the end of the exposition, the

strictly delineated boundaries of the concerto have already begun to blur, suggesting that the thematic material of this work is just as much about human relationships as it is about sonic texture.

The development continues this process of shuffling and redistributing creative liberties. As the orchestra adopts techniques like *col legno* and overpressure bowing to mimic and blend with the bubble wrap, they are drawn into the soloist's world with directions such as "As if being dragged along by the soloist" (m.283). The section closes with a group improvisation where several instrumentalists are given rhythmic and melodic figures as a foundation for free variation. Within these figures, the trombone, percussion 1, soloist, and bass 2 parts are instructed to react and interact with one another. This creates a miniature "chamber" dynamic within the larger ensemble, where the instrumentalists listen through the texture for one another, seeking to create a four-part dialogue with one another through the mass of free performance. This interaction leads to a solo cadenza, where perhaps the highest degree of creative agency so far is granted to the performer.

By the final C section, the "one-versus-many" dynamic of the concerto is, at first, reestablished through a strict *solo* and *tutti* texture, then destabilized as the orchestra punctuates the solo texture with forte dynamics as the soloist is asked to "respond to orchestral sweeps." Unlike the earlier calls which appeared like an invitation within the texture, these sweeps act as more forceful interruptions that the soloist must react to. Ultimately, this overwhelms the singular bubble, as they conclude the section with "dead" clicks before the final rupture. This sentiment is then echoed in the orchestra as members of the orchestra abandon their own instruments for bubbles that they then also pop.

What's significant here is not just that these modes of agency alternate, but that Ko is systematically changing the degree of independence between performers, which further contributes to her deconstruction and reimagining of both sonata form and the concerto genre. In the exposition, the "one-versus-many" hierarchy is traditional. The soloist leads, and the orchestra supports. However, as the work progresses towards the final section, Ko collapses this hierarchy. By the time the ensemble adopts the bubble wrap at the end, the work has journeyed from strictly delineated roles of the leading "one" and the supporting "many" towards a general, collective "all." This recalls Christopher Small's concept of "musicking" and how meaning in musical works can be found in the relationships between musicians during a performance. Seen as an act as musicking, *Breath, Contained III*'s score functions as a map that delineates form through performer interactions.

How do playful, subversive, and careful treatments of the material manipulate expectations and redefine musical outcomes?

Lastly, I consider my last question: How do playful, subversive, and careful treatments of the material manipulate expectations and redefine musical outcomes? The previous discussions revealed how materiality and performer interactions support the structure of the work, but we will find here that in addition to these parameters, Ko's treatment of the bubble wrap influences the audience's engagement with the material. As explored in step 3, Ko's attitude towards this material is influenced by a long lineage of feminist experimental performance practices and environmental awareness. These ethical concerns, however, are not simply auxiliary concerns. Rather, they are reflected in the unfolding of the work. Specifically, Ko's playful attitude toward the material, combined with her subversion of material (and formal) expectations and sustained,

careful pacing aid in modeling a radically new mode of interaction with mundane objects and the austerity of the concert hall.

To begin with, playfulness is a key feature to Ko in her approach towards bubble wrap, as explored in Step 1. This attitude of playfulness encourages a heuristic approach towards musicality that challenges traditional notions of soloist "mastery." In the concerto genre, the soloist is typically expected to possess a level of technical control that ensures consistency and dominance over the instrument. However, because bubble wrap resists this kind of predictable control, technical mastery is practically unattainable. Even with an expanded vocabulary of methods to approaching the instrument, its exact responses to playing techniques remain somewhat unpredictable.

Ko, however, embraces this instability by granting the soloist a high degree of improvisatory freedom, which in turn encourages curiosity toward the instrument. In essence, the soloist is quite literally "playing" with the instrument. For example, the P theme grants the performer a total of 21 measures where they can extend and experiment with the initial gesture of swiping across multiple columns of small bubbles. Within these minimally defined directions and extended passages of time, the performer naturally finds themselves exploring the boundaries of the plastic, testing the friction of a sweep or the threshold of a click in real-time. This emphasis on curiosity over mastery transforms the instrument into a co-creator of sound rather than an object to be dominated into complete predictability.

This approach echoes Ko's ethics of care towards the instrument, which is also related to her use of subversion as a compositional strategy. Ko establishes, redirects, and withholds expectations regarding both the musical form of the work and everyday interactions with the object. These disruptions directly affect the audience's listening experience by moving

expectations away from preconceived notions of thematic return and toward the timing and fulfillment of material actions granted by the bubble wrap itself.

Similarly, the act of featuring such a banal instrument as a concerto soloist is its own form of subversion. By placing this "low-status" packing material center stage to have an established professional orchestra engage and respond to it, Ko challenges what can be considered a legitimate source of musical material. Furthermore, the pop is strategically withheld until the final moment, creating a prolonged material anticipation in the listeners. In delaying this expected action, Ko asks the audience to listen and engage with this mundane object over the full duration of the piece. When the pop finally occurs, it is further subverted through its communalization. Many concertgoers may not even notice that the instrumentalists have picked up their own sheet of bubble wrap before they hear it. This shared, almost humorous, conclusion aids in further challenging preconceived notions about the musical possibilities of mundane, "boring" objects.

Finally, Ko's careful treatment of bubble wrap is an inherently anti-consumerist stance. For most people, bubble wrap is a packaging byproduct intended to protect an object from damage during transportation, then to be immediately discarded either through disposal or destruction. By drawing attention to the bubble's potential to pop and delaying it through an extended section, Ko resists the habitual impulse to destroy the material, instead inviting the audience into her sustained and curious engagement with its sonic properties. This keeps the object "alive" through twenty minutes of performance, thereby transforming the work into an exercise in active attention. The care provided by the performer also extends to technical approach towards playing the instrument, where the soloist must draw out subtle timbral differences and refuse to participate in the immediate consumption of the object. In this way, the

performance models an alternative mode of engagement with the disposable material that prioritizes attentiveness, restraint, and prolonged interaction over immediate use and disposal.

Case Study Summary:

The previous case studies have examined both *Breath, Contained II* and *Breath, Contained III* as complementary explorations of how musical form can arise from material constraint, embodied gesture, and performer interaction. Across both works, Ko replaces traditional tonal organization that prioritizes pitch and harmony with a system that embraces the physical properties of bubble wrap (including its transparency, fragility, and pitchlessness) and uses them to expand the scope of musical possibility.

In *Breath, Contained II*, I reconsidered the work's form by prioritizing perceptual experience over purely notated structure. Although the score is divided into 22 sections labelled with rehearsal numbers, these divisions did not accurately reflect the experience of hearing the work move from one large section to the next. Thus, I applied Hanninen's segmentational framework, combined with Tenney's Temporal Gestalt theory to find where the work creates salient sectional boundaries through changes in the Sonic, Contextual, and Structural domains.

In doing so, this method revealed a large, quasi-palindromic structure consisting of sections A, B, C, D, then finally a return to A', and a codetta. However, a pure sense of symmetry is purposefully subverted. While the return to A' is marked by the return of the "surprise!" gesture from the first A section, Ko does not perfectly mirror the A section, instead omitting key subsections and therefore disrupting any sense of a pure formal closure. As a result, the work plays with the listener's expectation of structure and instead creates a sense of unpredictability.

This work clearly models Ko's playful, subversive, and careful approaches towards bubble wrap as discovered in Steps 1-3. It begins with Ko's use of playful and affective instructions juxtaposed with serious directions that help to expand the expressive possibilities of the material and orient the performers' approach towards shapes and character rather than execution of technique. It then continues with the "backwards" logic of beginning with the bubble pop, effectively redirecting the teleological expectation of building tension towards a pop. These features all combine to create work where form is created through dynamic interactions between material, performer, notation, and ensemble.

These approaches can be further observed in *Breath, Contained III*. In my analysis of this work, I showed how Ko evokes the traditional concerto genre—specifically sonata form--to reimagine its possibilities by using gesture and timbre as opposed to pitch and harmony as its primary organizational forces. In doing so, Ko creates salient P, S_1 and S_2 themes in her exposition which she further explores in the development, ultimately ending the middle section with a large cadenza. This all leads to a large subversion of the recapitulation. Instead of returning to the materials from the exposition in the "home key," Ko abandons the form entirely and takes up a single bubble. This, in turn, focuses the listener's attention on the materiality and fragility of this single bubble, building up an expectation or desire to see the bubble popped (in a direct mirror of the teleology of *Breath, Contained II*). This manipulation of expectation redefines how tension and release can be realized in music, ultimately producing a material and physical sense of closure at the end of the work.

In the following section, Step 6, I pivot away from the musical details of the works and instead ask questions about how this trilogy fits within existing aesthetic and philosophical traditions. The prominence of non-pitched sound, combined with an emphasis on timbre and the

transformation of a quintessential object invites a comparison to earlier experimental practices. However, at the same time, Ko's insistence of the visibility of gesture, the preservation of material sound source, and the use of large-scale formal frameworks complicate any straightforward categorization. Thus, in Step 6 I shift my focus to ask how the work both functions and can be understood in a broader context.

Step 6 – Cultural Elaboration:

In Chapter 2's Step 6, I investigated how well Saariaho's *Innocence* adhered to definitions of postmodernism, in turn discovering how that singular label alone was not enough to describe both the emotional core of the opera and the creator's intentions when writing it. Here, I ask a similar question about Ko's *Breath, Contained* trilogy; however, instead of inquiring about postmodernism, I ask if this work can be defined either explicitly as *musique concrète* or as adjacent to its philosophy. At first glance, the answer appears to be yes. However, much like how the label of postmodern alone was not enough to describe the totality of Saariaho's *Innocence*, this step will unveil how the genre of *musique concrète* only partially captures the intent and execution of Ko's work.

The selection of *musique concrète* as the lens for Step 6 may seem confusing at first, given that the genre was invented nearly 80 years prior to *Breath, Contained*'s creation. However, this investigation is primarily ontological rather than prescriptive. Instead of trying to label this work with this genre (which would be inaccurate at best and completely contradictory to my previous research in steps 1-3 at worst), I aim to examine and uncover the philosophical pillars of *Breath, Contained* and how they manifest in performance. While *musique concrète* as a historical movement reached its peak in the mid-twentieth century, its core philosophical tenets,

such as the prioritization of sounding objects and the pursuit of "reduced listening," persist as a compositional stance that transcends stylistic eras. By invoking this genre, I am not suggesting that Ko is attempting to revive this genre, nor do I posit that her work fits neatly within this lineage (as examined in Step 3, Ko's work better falls under the lineage of feminist experimental music). Rather, I am using this genre to explore how her work reflects or rejects the same aim of materialism as first explored by Schaeffer and other composers of *musique concrète*. In other words, I seek to uncover ways in which Ko's work contributes to or fits within broader historical narratives and movements that are not explicitly named by her. As I will find in the following discussion, *musique concrète* at times describes some of Ko's goals, but not all, thus this genre label provides somewhat of a counterexample of what Ko aims to do with her bubble wrap.

I will explore the lineage of *musique concrète* throughout the 20th century, but I begin first with Pierre Schaeffer, who, in the 1960's, used this phrase to describe a compositional approach based on recorded "sound objects" (*objets sonores*) that prioritized timbral transformations over traditional tonal hierarchies.[143] Ko's use of bubble wrap seems to follow this lineage of practices. She takes this everyday object and turns it into an instrument, foregrounding and spotlighting the sounds that emerge from her manipulation of the material. However, for Schaeffer, *musique concrète* is much more than collections of odd or manipulated sounds. Rather, one of the primary goals of *musique concrète* as a compositional stance is to reorient how listeners encounter and understand sound.

In traditional Western art music, the concept of a work begins with pitch and harmony, then proceeds towards large-scale structures that create psychologically satisfying patterns and symmetries. In this traditional model, timbre and orchestration are decorative qualities that

[143] Pierre Schaeffer, *Treatise on Musical Objects: An Essay across Disciplines*, trans. Christine North and John Dack (Berkeley: University of California Press, 2017)

emphasize or bring out certain tonal structures. In contrast to this, *musique concrète* conceptually begins with sound then manipulates and distorts it to invite the listener into a space where sound is often removed from its original context. As later theorists such as Michel Chion have elaborated, this practice encourages "reduced listening," defined as a mode of perception in which the listener psychologically brackets the source of sound to focus on its timbral properties.[144]

Now, I return to *Breath, Contained*. In many respects, Ko's work appears to align with this tradition. Like Schaeffer, she foregrounds the sonic qualities of a non-musical object, highlighting the differences between swipes, clicks, taps, and pops. The emphasis on timbre over pitch, the exploration of a limited sonic palette, and the focus on the physical production of sound all resonate strongly with the aesthetic priorities of *musique concrète*.

However, despite these points of accord, *Breath, Contained* contradicts some of this genre's core tenets upon closer examination. One of the central premises of Schaeffer's concept is the separation of sound from its source. Sounds are detached from the objects and actions that produce them, which create individual and autonomous sonic entities. Ko's work, by contrast, insists on the exact opposite of these conditions. As explored in Steps 5, the modes of contact with bubble wrap are not only crucial for creating new sounds, but also for articulating contrasts that are then organized into large-scale forms. For instance, consider the subversion of the recapitulation in *Breath, Contained III*, where Ko reduces her entire instrumental setup to a single bubble. Part of what creates so much tension that then drives towards the final cadence is the act of seeing the soloist perform a limited range of gestures on the solo bubble. Without this visual aspect, much of the playfulness of the final pop is lost. Were the sound to be wildly

[144] Michel Chion, *Audio-Vision: Sound on Screen*, trans. Claudia Gorbman (New York: Columbia University Press, 1994).

distorted via electronics, the audience would lose the sense of anticipation for the final pop, and the gestural tension would be lost entirely. Thus, for Ko, the sound of the bubble wrap is inseparable from the visible and physical act of its manipulation.

The classification of this trilogy as a work of *musique concrète* becomes even more unstable when considering how Ko uses electronics. In *musique concrète*, recorded sounds are often rearranged, repeated, or transformed beyond recognition. Consider, for instance, Schaeffer's own work *Étude aux chemins de fer* (1948). The work begins with recognizable sounds of trains, but the work gradually subjects these sounds to primitive electronic manipulations like reversal and fragmentation that ultimately obscures the sound source entirely. Ko's work does not display the same level of sound abstraction and source removal. Though I don't discuss the role of the electronics in her work, listening to the pieces reveals this detail easily enough. At most points in *Breath, Contained II* and *III*, the gesture that creates the sound and the resulting sound itself align. When the performer sweeps the bubbles, the listener expects a swishing, sweeping sound, which is exactly what happens. Electronics, then, are used to amplify or provide sustain more so than to bracket or alienate a sound from its source.

So, while Ko's work aims to spotlight the granular sounds of an everyday object, the label of *musique concrète* fails to accurately describe her compositional stance and philosophical goals in instrumentalizing this object. M*usique concrète* ultimately seeks to abstract sound from its origins, but Ko's work aims to re-embed sound within its material conditions. Therefore, *Breath, Contained* rejects and inverts one of *musique concrète's* foundational assumptions. This leads the discussion into an exploration of later conceptions of *musique concrète*. I turn now to scholars and composers that have developed this genre's features in the second half of the 20th century.

Helmut Lachenmann is often credited for expanding Schaeffer's initial ideas into what he called *musique concrète instrumentale*. While this term appeared in his early lectures and program notes, it's most clearly explained in his collected writings, *Musik als existentielle Erfahrung* (1996). Here, Lachenmann insists upon the audibility of the physical energy and mechanical labor required to produce sound. He defines this kind of music as one where the listener can hear the conditions under which a sound is created, including what materials are being used.[145] This is a considerable inversion of Schaeffer's original conception of this concept. However, despite these differing stances on the audibility of the sound source, both composers share an ontological commitment to timbre as a primary structural parameter in music.

Consider, for example, one of Lachenmann's more famous works, *Pression* (1969) for solo cello. In this work, a purely graphic score instructs the cellist to bow the body of the instrument, to apply overpressure with the bow to reduce the pitch to a grating click (very similar to Ko's use of overpressure in *Breath, Contained III*), and to bridge the gap between the strings and the wood, amongst other unconventional techniques. As an additional example of this approach, his work *Guero* (1970) for piano features no striking of keys at all. Rather, the performer scrapes the surfaces of the keys and tuning pins, translating playing techniques commonly used for the guiro to the piano. Unlike Schaeffer, who wanted the listener to forget the source of the sound and to perceive the sound object itself, Lachenmann wants the source of the sound object to be considered in the perception of the sound object.

This description of *musique concrète instrumentale* better suits Ko's treatment of bubble wrap, as it accounts for the source of the sounding object that constitutes much of Ko's structural logic. As explored in Step 5 for both works, the differentiation between swiping, pressing,

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[145] Helmut Lachenmann*, Musik als existentielle Erfahrung: Schriften 1966-1995*, ed. Josef Häusler. (Wiesbaden: Breitkopf & Härtel, 1996).

tapping, and dragging is not only timbral, but gestural and physical. Furthermore, the difference between each gesture performed on the bubble wrap presents the qualities and constraints of the material that dictate what is musically possible. The contrast between *Breath, Contained III*'s dispersed energy of its P and the concentrated, single-column squeaks of the S themes are but one example from Ko that mirror Lachenmann's own emphasis on how physical effort in creating sound can become a primary structural pillar.

However, Lachenmann's framework still does not fully account for the work's broader aesthetic and structural aims. His compositional stance often invites a sense of artistic austerity to these odd sounds, meanwhile, Ko's approach is better defined by a heuristic spirit of play and curiosity. As observed in Step 5, this attitude is not solely ornamental, but it also informs the performers' approach. Her playful directions and her encouragement to performers to have fun exploring their instrument act as strategic directives that directly impact the sounding result.

So, while the *Breath, Contained* trilogy's spotlighting of mundane material is reminiscent of the lineage of *musique concrète*, this exploration reveals that the label only partially captures Ko's intentions when writing this work. Even when stretched to include Lachenmann's *musique concrète instrumentale*, these frameworks primarily describe approaches towards materiality and sound production. They still fail to account for Ko's insistence on playfulness and subversion. Thus, to fully describe the totality of Ko's ideology, I must bridge these historical foundations with other musicological perspectives. To do this, I bring in two authors: Gretchen Wheelock, whose work on Haydn and his "ingenious jesting" illuminates Ko's insistence on subversion, [146] and John Pippen, whose work with contemporary avant garde ensembles reveals how

[146] Gretchen A. Wheelock, *Haydn's Ingenious Jesting with Art: Contexts of Musical Wit and Humor* (New York: Schirmer Books, 1992). For more information on Haydn's use of humor in his musical syntax, see Poundie Burstein (2010, 1999)

contemporary experimentalist music practices are increasingly moving towards playful modalities.[147]

I begin with John Pippen's work *Toward a Postmodern Avant-Garde*. In his ethnographic work on contemporary experimental musicians (specifically the ensemble eighth blackbird), he observes a recurring tendency amongst performers and composers to approach experimentation through curiosity, discovery, and enjoyment rather than through the austerity often associated with twentieth-century avant-garde traditions. In Pippen's words, this is much more reminiscent of "bon vivant" rather than "enfant terrible" as experimentalism used to be described.[148]

Throughout his study, the musicians of eighth blackbird repeatedly describe a desire to invite audience members into their unfamiliar sound worlds rather than alienate them from it. They cultivate this sense of friendliness through their concert programming, performer demeanors, and public presentation. This positions them as guides to help navigate audiences through these soundscapes rather than gatekeepers that reserve new music enjoyment. For Pippen, this orientation reflects a broader shift within contemporary experimental music away from modernist narratives of austerity and towards what might be described as a more playful and welcoming ethos.[149]

This approach is remarkably reminiscent of what Ko is doing in *Breath, Contained*. The playful directions scattered through the pieces, or the encouragement of improvisatory exploration from the musicians all align with the forms of accessibility and curiosity described by Pippen. The use of bubble wrap itself can be seen as an entryway for audience members into

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[147] Pippen, *Towards a Postmodern Avant-Garde* (2014)

[148] Pippen, 84

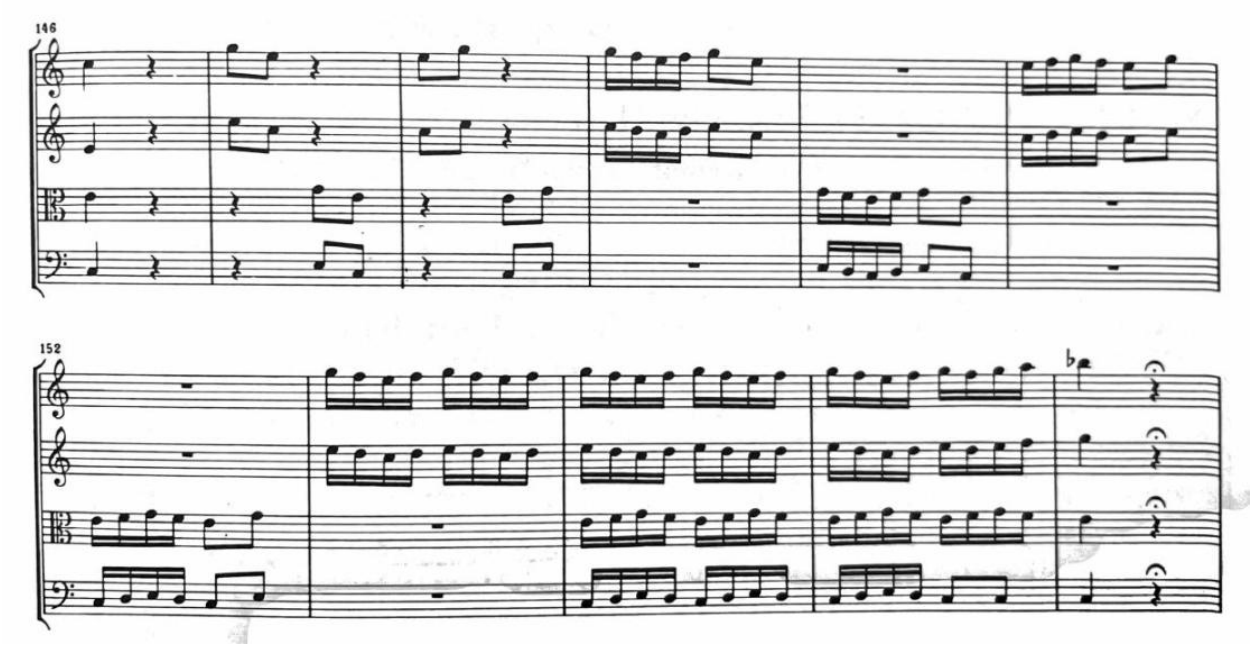
[149] Pippen, 83-86

this experimentalist work. Listeners already possess a tactile familiarity with the material, allowing them to preemptively engage with the music without any specialized musical knowledge. In this sense, Ko's approach to playfulness in her works reflects the broader contemporary experimental tendency to cultivate wonder and fun as discovered by Pippen. The trilogy therefore participates within this lineage of experimental practice that embraces audience engagement, playfulness, and delight.

So, while Pippen's description of contemporary avant-garde attitudes helps to understand Ko's approach towards playfulness in her work, subversion remains unaddressed. To complement these readings and to account for Ko's insistence on subversion, I turn to Gretchen Wheelock's work on Haydn's musical wit. This move from mid-century avant garde to the eighteenth century is undoubtedly a dramatic shift; however, I am not suggesting that Ko is directly borrowing from or influenced by the Classical tradition or Haydn specifically, but I do contend that her work shares an affinity for jokes and "jesting" similar to Haydn. By utilizing Wheelock's framework for understanding Haydn-esque wit, we can better understand how Ko uses subversion as a structural pillar to her work that invites the audience to attend to the nuances of these musical jokes. Understanding Ko's approaches as somewhat of a game played between the composer, performer, and audience allows us to get much closer to capturing the totality of her compositional approach.

In Gretchen Wheelock's analysis of Haydn's work, she argues that his use of humor in his works is a purposeful decision to violate the rules of musical forms which in turn forces the listener to engage with the music as a constant surprise. For Wheelock, this creates an almost collaborative relationship between the audience and performers who, together, must navigate Haydn's constant subversions. As an example of this, Wheelock discusses Haydn's Op. 33 string

quartets (from which the infamous "The Joke" quartet comes). In one section, she discusses how Haydn handles the finales of his string quartets, often opting for a more straightforward arrangement of themes to set up for Rondos or Variations. In the case of the finale of Op.33 no. 3, however, he parodies fugal techniques in a humorous way, subverting listener's expectation of typical subject-and-answer syntax. An excerpt of his score from Wheelock's book that demonstrates these types of musical jests is shown below in Example 48. The humor here lies in the disconnect between what listeners expect a fugue to sound like and how the work subtly subverts these expectations.[150]



Ex. 48: Joseph Haydn's Op. 33/3/iv, mm.146-56, showing a parody of fugal functions between the four voices

This description is reminiscent of the approaches to subversion that I've uncovered in Steps 5 of my analyses. In the *Breath, Contained* trilogy, Ko uses subversion in exactly the same way. By utilizing the Sonata and Arch forms, Ko establishes an expectation for a highly

[150] Wheelock, *Haydn's Ingenious Jesting*, 90-115

regulated form. However, in both *Breath, Contained II* and *III*, she ultimately "pulls the rug out" from under the audience, which both surprises the audience and invites them to engage in a more active listening process.

In *Breath, Contained II*, Ko's form at first appears to be entirely modular. The quasi-palindrome doesn't reveal itself until the end of the piece, where the "surprise!" gesture happens again. Thus, there's somewhat of a double subversion here. The first subversion occurs through the recognition of a familiar gesture at the end of the work. This suggests some kind of return to the opening section. However, Ko doubly subverts that expectation by refusing a complete palindrome. She recalls fragments and parts of the A section without mirroring it entirely.

This double subversion can be seen as a contemporary application of the Haydn-esque wit described by Wheelock. She argues that Haydn's musical humor often occurs when a familiar formal pattern appears to be unfolding normally, only for the composer to interrupt, delay, or reroute the expected outcomes. Ko employs a similar strategy here. She uses the return of the opening material to manipulate the listener's understanding of both the preceding musical material they just heard and what they expect to follow. In this case, the return of the "surprise!" is Ko's set up for the structural punchline, then the following remix of parts of the A section are the punchline itself.

Breath, Contained III provides a more direct link to Wheelock's conception of formal subversion and joking as portrayed by Haydn. In this work, Ko invokes Sonata form, a structure historically associated with tonal models of tension and release. Immediately at the conception of the work is a fundamental subversion: bubble wrap can not produce pitch. Already in the framing of this work, there's a bit of humor in positioning this object in such a seemingly impossible form. However, as explored in Steps 4 and 5 of this work, Ko creates a convincing sense of

formal closure in part due to the grand subversion of the recapitulation at the end of the work that reimagines tension and release as gestural rather than tonal. Here, the pop at the end of the work acts as the structural punchline. The audience becomes more aware of the fragility of the object through the spotlighting of a single bubble and the minimization of available gestures. However, because the work has delayed any sense of pop for the duration of the piece, the audience cannot be sure whether the performer will actually pop the bubble. This is similar to the "The Joke" quartet's finale, where the audience can't quite tell when the work is actually going to end due to Haydn's constant fragmentation. When the pop does happen in Ko's work, not only is the material tension resolved, but Ko doubles down on it. The pop is echoed in the orchestra as several instrumentalists pull out their own sheets of bubble wrap to pop on, effectively maximizing the audibility and effect of this punchline. This shows how play and curiosity are essential. The performer must adopt the role of the Haydnian "jester," perfectly pushing the material to its limits to land the joke at the precise moment of formal expectation.

Ultimately, Wheelock's framework provides an entry point to understanding Haydn-esque musical wit, a trait that I see reflected in Ko's work. For Ko, these layers of subversion are not merely aesthetic or fun, but act as structural pillars for the *Breath, Contained* trilogy. Without the element of play, the performer's heuristic exploration of the bubble wrap would be reduced to mere mechanical labor, lacking the almost mischievous timing necessary to maintain formal tension. Furthermore, it would alienate the performer from the audience, as the extra layer of austerity would encourage the audience not to be delighted by the use of this playful, toy-like object in music. Without subversion, the use of the Sonata and Arch forms would be a rather empty act of traditional mimicry, instrumentalizing bubble wrap and placing it within these frameworks to create a one-to-one attempt at treating bubble wrap like a traditional solo

instrument. This, in turn, would remove one of Ko's most compelling musical features of embracing the material limits and possibilities of this object. In both the delayed revelation of the almost-palindrome in *Breath, Contained II* and the parodic tension of the pop in *Breath, Contained III*, subversion serves to connect the audience and performers through their shared experiences with this quintessential object, proving that the while part of Ko's approach can be traced back to the austere narratives of sound and material as portrayed by proponents of *musique concrète*, it can be further supported and understood by her witty approach to the idealities of formal design.

Conclusion:

Across this six-step inquiry, I have explored how Ko's *Breath, Contained II* and *III* present a unique and profound treatment of bubble wrap as an instrumentalized found object. My investigation began in Step 1, where I tracked the evolution of the work from experimentation to a large-scale orchestral project. I uncovered how Ko's dual interests in composition and visual arts (with inspiration from Agnes Martin and guidance from Gregory Page) led her to bubble wrap. This creative impetus was further refined through collaboration with other artists and technological mediation. Specifically, she used the ORCHIDEA software to break down the spectral components of bubble wrap and suggest orchestral analogues for its squeaky, plasticky sounds. This allowed her to move beyond the presentation of only bubble wrap (a solo in the case of *Breath, Contained I*, or a 5-person bubble wrap ensemble in the case of *Breath, Contained II*) to a more traditional instrumental setting where the orchestra's gestural palette was directly derived from the acoustic properties of the bubble wrap. Throughout her development of work with bubble wrap, play and subversion remained at the core of her approach.

I then continued into Steps 2 and 3, which expanded the inquiry from composer-specific sources towards broader performer-based and sociopolitical inquiry. In Step 2, I sought to understand the relational dynamics between the performers and the bubble wrap through interviews with the Ars Nova ensemble, who performed *Breath, Contained II*, and Milena Gligic, who performed piano in the premiere of *Breath, Contained III*. Through their responses, I found not only that the material demanded a rigorous approach towards learning its technique, but also that ensemble coordination was a key feature of putting the work together. This led into Step 3, where I used Ko's own dissertation as an entry point into understanding the lineage of feminist experimental performance practices that inspired her. In specific, she draws heavily on the balloon performances of Judy Dunaway, who stages spectacles of female sexual agency through her musical interactions with latex balloons. Ko takes Dunaway's instrumentalization of an object often considered a toy and uses it as inspiration for her own approach to bubble wrap, treating it as an object to be sustained and carefully handled rather than immediately destroyed. This careful treatment of bubble wrap is reminiscent of how Jane Bennett describes "vibrant matter"—unalive materials that enact their own agency upon living beings. In the same way that a shiny coin might beckon someone to stop to pick it up, bubble wrap beckons us to pop or play with it, and Ko, keen to this characterization, uses it as a point of tension and subversion in her works. Furthermore, her sensitive approach to bubble wrap can be seen as a continuation of feminist ethics, and I consider this attitude as an "ethics of care," specifically as it relates to contemporary, fourth-wave feminism. In the context of our global climate crisis, this refusal to immediately consume and discard the plastic is a quiet, but radical, political act.

I then move onto Steps 4 and 5 for both *Breath, Contained II* and *III*. For Breath, Contained II, I utilized Hanninen's segmentation and Tenney's Temporal Gestalts to prove that in

the absence of pitch, social dynamics and gestural density become the primary structural pillars. By using these parameters, I created sections in the work that formed a quasi-palindromic form. At the end of the work, the opening A section begins to repeat in a mirror-like symmetry. The "surprise!" gesture from the beginning is repeated precisely in reverse. However, Ko does not continue the palindrome in perfect symmetry. Rather, she cuts out certain segments entirely and changes the ending to be drastically different from the opening. Instead of ending with pops the same way the work began, the work ends with a quiet solo as Performer 3 drags gently on the bubbles. By teasing a perfect symmetry only to omit expected modules in the return, Ko ensures that the listeners remain in a state of active listening rather than passive waiting for a conclusion.

In *Breath, Contained III*, this logic of subversion is further expanded into sonata form. Ko presents the work as a standard type-3 sonata, complete with an identifiable P theme, 2 S themes, a closing theme, a development, and a cadenza to end the development. However, rather than presenting a traditional recapitulation that typically presents the exposition's themes without modulation, Ko abandons the form entirely. Instead, she picks up a single bubble and performs a limited range of gestures on it, heightening the audience's awareness of the object's fragility and building tension toward the final cadence of the piece—a pop. This provides a physical sense of release that mirrors tonal resolution, showing how Ko reinvents tonal logic for a pitchless object.

Taking these observations into Step 6, I inquired into how Ko's work reflects or rejects some of the philosophical tenets of experimentalism in the 20th century. Specifically, I chose the lens of *musique concrète* as defined by Schaeffer, and *musique concrète instrumentale* as defined by Lachenmann. While her work shares some of the timbral focuses of these *musique concrète*, her work fundamentally rejects its concepts of bracketed listening and austerity. Ko does not want to alienate the sound of bubble wrap from its source. Instead, she insists on the audio-visual

connection of the gestures used to produce sound. Even compared to Lachenmann's later *musique concrète instrumentale* which does insist on the audibility of the sounding object, Ko's work stands apart through its heuristic spirit. Where Lachenmann emphasizes the mechanical labor and austerity of sound production, Ko invites a sense of play. Thus, to bridge these gaps, I looked backwards in time and brought in the Haydn-esque jesting framework as described by Wheelock. With this framework, we can see that the bubble wrap is not just an object to be analyzed, but a prop in a game. This helps us better understand the role and purpose of play and jesting in Ko's work on the part of the composer, performer, and audience.

Through this journey from Step 1 to Step 6, I have traced the transformation of bubble wrap from a visual and tactile curiosity into a refined musical instrument. By moving from the initial composer-specific investigations to the formal mapping of *Breath, Contained II* and *III*, then to a broader discussion of how this work interacts with historical narratives, this chapter has demonstrated how Ko's musical logic is defined by the sonic limitations and possibilities of the plastic material. The analyses of these works reveal a compositional language that prioritizes gestural and timbral clarity as well as performer interactions as the primary components of structure which, in turn, aid in reinventing traditional formal and tonal expectations for a pitchless found object. Ultimately, the work shows how an "ethics of care" toward a mundane object can offer a new perspective on the roles of play and subversion in contemporary composition. With this analytical inquiry complete, I turn now to the final chapter of this dissertation to synthesize my findings and offer concluding reflections on the broader implications of this research.

CHAPTER 4

CONCLUSION

The central objective of this dissertation has been to develop a hermeneutic method capable of addressing the unique conditions of twenty-first-century music. Throughout this study, I have contended that contemporary works often exist in a liminal space where purely formalist music-theoretical approaches sometimes fail to account for the ways in which works influence and are influenced by the world surrounding the composer. At the same time, purely historical musicological approaches sometimes lack the granular tools to connect their observations about the composer and their worlds to the sounding details of the music itself.

The issue I have sought to solve is this disciplinary divide, and my proposed solution is the six-step hermeneutic methodology presented in this study. This framework begins with Hans-Georg Gadamer and his concept of "horizons" and how understanding occurs through a fusion of the analyst's perspectives and the historical/material details of the work. The goal of my method is to prepare analysts for this fusion through extensive inquiry prior to analysis.

The first three steps of my method involve investigating primary sources related to the composer, conducting ethnographic inquiry with performers and other creatives involved in the work's creation, and exploring sociopolitical contexts. This prevents the analyst from making detached assumptions and allows them to design targeted analytical questions which, in turn, determine the specific music-analytical tools that can be used in Step 4. Once the analysis in Step 4 is complete, Step 5 asks the analyst to interpret their findings within the context of the findings of steps 1-3, unveiling the ways in which the music reflects the world of the composer. Step 6 then zooms out to ask broader questions about philosophical and historical lineages. Importantly,

this method is scalable and repeatable, reflecting Gadamer's idea of the hermeneutic cycle, and that interpretation is never fully complete.

In the case of Kaija Saariaho's *Innocence*, this methodology revealed how her score used motivic interactions to reflect the complexity of trauma, healing, and guilt. Through the application of Steps 1 through 3, I established a vital foundation for understanding the creative team's intentional focus on survivors and avoidance of the perpetrator's perspective. This allowed me to approach my analysis with the goal of understanding the nuanced portrayal of survivors as victims of a horrific crime who are also burdened by regret over their perceived failure to prevent the tragedy. My methodology allowed me to stay true to the creative team's intentions, which allowed me to curate analytical questions that guided my motivic analysis through the three case studies. Then, the speculative inquiry of Step 6 allowed me to understand Saariaho's opera in the context of the modern day, testing out the label of postmodernism and finding that it alone was insufficient to describe the emotional core of the work. I then brought in trauma studies and memory studies to supplement this study, showing how *Innocence* engages with a twenty-first-century perspective on the effects of trauma and memory as related to healing and survivorship.

For Tonia Ko's *Breath, Contained* trilogy, the study moved into a more abstract realm of analysis focused on the intersection of found object performance practices and more traditional formal archetypes. Given the experimental nature of this work, the exploration through Steps 1-3 proved even more useful for orienting my approach. By investigating Ko's primary sources, conducting ethnographic inquiries with the performers, and examining aspects of late 20th-century feminist experimental practices combined with environmental readings, I began to understand how, for Ko, bubble wrap is not merely an auxiliary or novel effect but a

collaborative instrument with its own set of technical restraints and cognitive demands. This allowed me to approach my analysis in Step 4 with the goal of understanding how the materials, the performers, and Ko's heuristic spirit of play and curiosity dictated the formal logic of her works. The speculative inquiry of Step 6 further allowed me to evaluate Ko's work within a lineage of musique concrète, finding that this genre only partially captures the core of her work, and that play and subversion—à la Haydn—also play a role in how she recontextualizes traditional structures. Seeing her use of bubble wrap through this lens of witty humor, I argued that Ko utilizes the "un-musical" nature of her material to playfully disrupt formal archetypes. Thus, through the totality of this chapter, I demonstrated how Ko's material-first approach models a twenty-first-century compositional practice that prioritizes the agency of the sounding object. This approach shifts the analytical focus away from the composer's absolute control to a fluid collaboration between composer, performer, and object.

The application of the six-step method to both pieces demonstrates the framework's consistent utility and scalability. In both analyses, the sequential movement from contextual inquiry (Steps 1-3) to technical application (Step 4), to interpretation of musical detail (Step 5), and a reflection on how it engages with historical narratives (Step 6) proved essential for smoothing the process of horizon fusion between analyst and piece.

With this project, I aim to contribute a six-step hermeneutic framework that assists in bridging the gap between music-theoretical and musicological inquiry. While I am far from the first scholar to call for multidisciplinary approaches to musical analysis, my study provides a specific and repeatable procedure that can be scaled and adapted to any scholar's needs. Specifically, my choice to elevate ethnographic and sociopolitical data to a prerequisite for technical analysis ensures that the subsequent formal analysis is firmly anchored in the

composer's intentions and realities (to the extent that we can know them). Furthermore, while this method can be altered to suit analysis of music for any era, my study contributes to the growing field of twenty-first-century music analysis. As analysts and humans living in the twenty-first century, we are uniquely situated to engage with this repertoire that lacks a standardized analytical canon, recognizing in tandem how modern music can act as a mirror for our current world. Thus, by providing a structured yet adaptable roadmap to analysis, my study offers a new way forward for scholars who wish to honor both the technical intricacies and social character of the music of our time.

The successful application of the framework to works as disparate as a large-scale opera and an experimental found-object trilogy suggests that it could be equally effective in analyzing works from other musical practices. Aside from ethnographic inquiry with the composer, which may be impossible in the case of older works, I imagine a future for this project where scholars in any era of music can effectively adapt this method for their own use. Furthermore, I see potential for this project to be used in multimedia musical works like sound installations, or music with dance components. In classroom settings, this method can offer students a structured roadmap to engage with unfamiliar genres, allowing them to approach works as dynamic intersections between history and music. Future research could expand this methodology by applying the ethnographic inquiries of Step 2 to larger-scale institutional studies of contemporary ensembles, or the scope of the works studied could be expanded to the level of corpus. Ultimately, this framework is intended to be an open-ended tool, encouraging scholars to continue fusing horizons in ways that keep pace with the rapidly evolving technological and social conditions of modern music-making.

Finally, this dissertation asserts that the analysis of twenty-first-century music benefits from moving beyond the safety of isolated formalisms. In an era where technology allows composers and performers to be connected globally at the click of a button, analysts potentially do a disservice to the works (and themselves) by limiting their inquiry to the notes on the page. To understand the music of our time is to engage with the horizons of its creations, including the intentions of its composers, the work of its performers, and the weight of the world in which it exists. This six-step methodology offers a way forward for a more empathetic, rigorous, and holistic music scholarship. At the outset of this dissertation, I compared music composition to baking, suggesting that works (or pastries) can be better appreciated when understanding the occasions for which it was baked, the hands that prepared it, and the historical lineage in which it was crafted. By acknowledging these contextual details, a richer appreciation for the work emerges, moving beyond a chemical and material breakdown of its parts to understand its place at the table. This methodology asserts that the most rigorous analysis is one that acknowledges these contextual details—the sociopolitical, ethnographic, and historic horizons that give it meaning. In fusing these perspectives, our scholarship studies more than just sound, but also the human conditions that make that sound possible.

APPENDIX A
VIDEO INTERVIEW WITH TONIA KO, FEBRUARY 2, 2024 (TRANSCRIPTION)

Gabrielle Choma: It's really nice to speak with you today, Tonia, for this meeting. Let's go ahead and get started with some questions. So, first question I have for you: When did you start studying music?

Tonia Ko: So, I started studying music when I was 5. I was born in Hong Kong, and, I think, like for many families in Hong Kong, it was kind of automatic that the kids had piano lessons, and my sister had already started with piano. So, I did that, and I later picked up some other musical activities, like singing in choirs. So, it was piano and singing, those were my primary musical activities in childhood.

Choma: Were you always aware that you wanted to write music at a young age? Or did you realize that later on?

Ko: No, I just always knew that I loved music, but, I decided… I think, actually, I take that back! I did compose small piano pieces from when I was very young, so it was something I was interested in. But, I decided that I was going to pursue composition when I was a teenager, and the reasoning I had at the time without knowing anything about it was just that I loved music, I was good at it from an intellectual level, but I was very anxious as a performer. So, I was trying to think of things that engage with music without having to be on stage, which was terrifying to me. So yeah, that's when I decided to do like the "back end" of music and do composition.

Choma: You know, that resonates a bit with me too! I started playing viola in middle school, and I did that through my undergrad, and I realized in my undergrad how absolutely terrified I was of performing and how much I loved music but was terrified of the stage. So, that really resonates with me too. Can you tell me more about your musical upbringing? Who did you study composition with, and in what style?

Ko: So, when I decided I wanted to pursue composition, I was living in Honolulu. I didn't know any other composers, actually. I wrote a string orchestra piece for my middle school and high school orchestra, oh, and I played viola.

Choma: Oh! That's lovely. That's something we share in common. *laughs*

Ko: Yeah, kind of like secret, ex-violists *laughs*. So, yeah, I showed my piece to my orchestra director, and she encouraged me to reach out to the professor of Composition at the University of Hawaii. I studied with Donald Womack, who teaches there privately, in my last couple of years of high school. But, I also studied with various composition teachers in my undergrad and in my graduate degrees. So, at Eastman, I studied with many, since we rotated every year, so it was: David Liptack, Carlos Sanchez-Gutierrez, Ricardo Zohn-Muldoon, and Robert Morris. At IU I studied with 3 people over two years: Aaron Travers, Claude Baker, and David Dzubay. And at Cornell, my main teachers were Steven Stucky and Kevin Ernst. So, I had a lot of teachers. They wrote in very different styles, obviously. And, I will say they were great teachers in that I never felt like I needed to follow their styles, but I was probably very influenced, in whatever year it was, by the music they wrote and admired. So, it was a very eclectic experience, which I'm very grateful for.

Choma: So, you had a very wide, diverse experience with a bunch of different teachers in a bunch of different styles?

Ko: Yeah, exactly.

Choma: Do you find yourself still following in any one of those teachers' footsteps? Or have you departed into your own style at this point?

Ko: I think in certain aspects, if I analyze my own music, let's say *laughs*, yes I think I would definitely see these influences. One teacher I had talked a lot about the music of George Crumb, who he studied with. And so I guess with orchestration styles, I think, there's some influence

there. Steven Stucky was a really impactful teacher. I really looked up to him and his use of harmony, and so I'm sure there's some harmonic things in my music that are remnant of his.

Choma: I see! So, are there any composers or artists you admire? If so, why?

Ko: Gosh, this is a really tough question. It's changing all of the time.

Choma: Of course. Well, with what you're feeling right now, even if it's different from before or what's to come, what would you say?

Ko: Well, I think outside of my formal studies, I participated in a master class with Goerge Friedrich Haas, who was very encouraging specifically with my bubble wrap work, and specifically thinking of the through line of my practice over a long term.

Choma: Can you elaborate a bit on that? The through line?

Ko: Yeah, it's just, say, this idea of… to think about the role of my compositions over the long term. And also the kinds of like extra musical issues that it brings up. Like, what does it mean that I'm working with bubble wrap? And how does that come out of my personality? So, more like, thinking about my identity as an artist.

Choma: I see, thanks for elaborating! So, how did you discover bubble wrap? What draws you to it?

Ko: So, I actually discovered it at Cornell, where I was supposed to *laughs* be focusing on becoming a composer and writing for orchestra. I was always kind of like a doodler, like on paper, so I wanted to do something with my interest in visual art. And, I think maybe I can add to the artists that I admire, I was really into Agnes Martin, and her kind of like… being so close to the material. When I see her paintings, it's like, the canvas is very much a part of her work. So, anyway, I embarked on an independent study with Gregory Page, who's primarily a print maker, but an art professor at Cornell, the next building over. And I took drawings to him every couple

of weeks, and we would have discussions about my drawings but also the overlaps between music and visual arts. Because, they use the same terms, like “rhythm,” and “texture,” which mean completely different things. One day I said to him “I really love transparent music. When the texture is really transparent, you can really hear everything that’s going on, even if it might be very complex.” And he said “well, that’s a good idea, to draw on transparent objects.” Which brought me to bubble wrap.

Choma: That’s fascinating! That’s so interesting.

Ko: Yeah, so, it actually started out as a visual arts medium.

Choma: Would you say you’re trying to do something with synesthesia, trying to match what the texture looks like to what it sounds like, or a different source of inspiration?

Ko: I think with bubble wrap, that’s one of the lessons it taught me. The sort of indexical relationship between the mechanism of the object and also the resulting sound. You know, with big bubbles, because theyre larger and further apart, when I rub my hand across it, it’s lower in pitch with slower rhythms. And vice versa for small bubbles. So, I had this big roll of bubble wrap from painting on it and then I was taking Computer Music, where there was a final project for live processing. That’s where *Breath Contained I* and *II* come from, just like, working with Max MSP. And so, yeah, it was a class full of composers, and Cornell’s department is very small, so I was like “yeah, I’m not going to do piano. Everyone’s going to write for piano.” That’s how I got to bubble wrap.

Choma: That’s fascinating, thank you! Can you tell me more about how your pieces for bubble wrap influenced your pieces written for traditional instruments?

Ko: Yeah, sure, so, bubble wrap has been my companion for the last decade. I don’t only work for bubble wrap, it’s actually only a small part of my output. But yeah, the trade-off has been really important, because it’s changed the way I think about instruments. I think it encouraged me to take the risk away from thinking about how to build on the repertoire that I knew for the

instruments, but to instead just analyze them as objects. So I was thinking "how am I gonna move my hand across the bubbles with enough speed and pressure to make a certain sound?" Which lead me to think more analytically or abstractly. Y'know, it's like, on violin, it's the tension of the string, and the speed and pressure of the bow, for instance. So, in my marimba piece, there's this way of playing, but it's also like, this is just how I like to move my body when it comes to playing the instrument. I've applied that to marimba in that piece, since there's a lot of horizontal movement.

Choma: So, the technique is to transfer the physicality of playing bubble wrap to other instruments?

Ko: Mhm, and in that piece it was very clear and possible. Very easy to transfer.

Choma: I see, that's really interesting, thank you. So, as a 21st century composer, what are some of the biggest challenges you face?

Ko: I think the biggest challenge is the fragmentation of everything. There's just so many different outlets for my music that I have to tend to, let's say. So, there's the digital realm, but also I think things are just much more connected, and so there's more opportunity, but there's more fragmentation in that. I'm very lucky to be having such an international career, but then it's just like, little bits and pieces everywhere. I feel a bit torn because I feel like I would love to be able to pay 100% of my attention to this concert in this place, but at the same time, it's super far away and I can't get to it. And with the fragmentation, too, it comes with how our economy is set up. Things get devalued, so I have to do lots of many little bits to keep the career going.

Choma: I see. You really have to be an entrepreneur then, huh?

Ko: Yeah, and I think it feels a bit… it doesn't always jive with my personality. I would much more prefer to… well, I have a very single-tracked mind. I would love to have more focus. So, it's about keeping my own focus while trying to juggle everything *laughs*

Choma: It sounds like juggling is the perfectly appropriate verb there, with so many things. You've already partially answered my follow up question. Do you think these struggles are unique to the 21st century?

Ko: I think some things are. Certainly, like with the digital proliferation. But, I think in many ways, being a composer has always been difficult. I'm sure you've encountered letters from Mozart just begging people for money *laughs*. I think the challenges now are just like… y'know, with things being very international, there are more issues. Social and political issues, being able to communicate clearly across those differences. Someone with a very international background, it's like, are they gonna understand what I mean by this?

Choma: Yeah, sometimes these terms and concepts can be so unique to a region at times. I imagine you almost have to translate, even within the same language. For my last question, maybe let's end on a happy note. What's your favorite part of being a composer?

Ko: The variety of what I'm able to do. Variety within myself. With every new piece, I can try something new. Of course, I try to build on my research, but I do feel I can reinvent myself to a certain degree with each piece. The variety is also with the activities I'm involved with. I can be a hermit, but the pay-off is I can go and have concerts and work with people and have concerts. It's just never boring.

Choma: That's a really nice way to put it. That actually wraps it up for this short meeting. Thanks for answering all my questions! I'll go ahead and stop the recording.

APPENDIX B

EMAIL INTERVIEW WITH ARS NOVA ENSEMBLE – JONATAN SERSAM AND AGATA TUCHOŁKA, MARCH 20, 2026

Gabrielle Choma: Could you briefly describe your experience performing contemporary or experimental works, particularly those involving open notation or group improvisation? How did *Breath, Contained II* fit within that experience?

Agata Tuchołka: I have been playing contemporary/experimental works since my studies at the Malmö Academy of Music. The first advanced and challenging piece I worked with was *Cassandra's Dream Song* by B. Ferneyhough and that had already given me a lot of knowledge, understanding, skills and practice when it comes to new notation. It was being thrown into the deep end - practicing required a lot of resilience (and time, from the moment of opening the score for the first time until the first performance prob ca 5 months) but also gave me a wide set of tools and preparation for future works. The other big piece that made me widen my set of contemporary tools was Stockahusen's *SOLO*. Ever since playing those two works, no other piece felt equally challenging. Tonia's piece was a new experience when it comes to the "instrumentation" - I had never played a piece with bubble wrap. The notation wasn't necessarily very challenging per se, it was rather the combination of getting used to a new instrument and the notation that fits instrument's qualities.

Jonatan Sersam: I worked a lot with experimental music, different types of semi-graphic and graphic notation and improvisational elements etc. I played a piece by M Maierhof (*Shopping 4*) which kind of fits this tradition. *Breath, Contained* to me felt quite free in its notation, with approximate durations, graphical notation, although clear but quite open. *Shopping 4* was much more detailed and notation-wise more "traditional" in the sense with tempi, durations and such. So the challenge with Ko's piece wasn't so much to decipher the notation, but more to understand my own part in the whole.

Choma: Although Ko provides a key for interpreting the symbols in the graphic score, were there moments where the notation still left room for ambiguity or performer interpretation? How did the ensemble navigate those situations in rehearsal?

Tuchołka: Yes. It was about the way of touching the material, dynamics and intensity of expression. When we play as an ensemble we always discuss the possibilities and eventually find a compromise or choose an idea that we all like. But I think all the qualities that needed to be discussed during our work with Tonia's piece are rather standard when it comes to interpreting ANY sort of piece as a group.

Sersam: Hm. I can't remember exact moments, but it definitely left room for interpretation. We had to make many decisions on how to move forward with some sections I remember. But honestly I don't think we had more problems interpreting this than any other piece. We always need to make choices on how to move about, how to sync our ideas etc. In our ensemble, we chose different persons to send cues for each part. So it was quite democratic. And the person that was responsible for the section also became a bit "head" of that part, so she chose which things focus on.

Choma: How were decisions made within the group during rehearsal? For example, were ideas proposed collectively, led by specific individuals, or informed through consultation with the composer?

Tuchołka: We used our own solutions, I have no memory of having the need for consulting anything with Tonia at that stage.

Sersam: See above! The intention is always to work closely with the composer, but my experience is that since it's so hard to find a place and a date a time that works for everybody, time is limited, and we need all the time when we meet to put it together. Also, part of the fun is the interpretation. I think the composer wants to work with musicians, and we want it too, but in practice, it's hard to make it work. I'm a composer, and I actually enjoy letting the musicians make what they want of the material without me being too involved. They ask me "how do you

want this?" and I always reply "how do YOU want it?". But that's of course different for each composer

Choma: Did the ensemble members initially approach the material in similar or different ways? If there were differences, how were those resolved over the course of rehearsal?

Tuchołka: I think we usually have quite similar ideas.

Sersam: Quite similar. We also had the video from a previous performance which we studied a lot. The biggest problem we had was to find the right type of plastic actually. I went to six different places and asked, but I couldn't find the plastic that Ko described. So we had to work with what we had. Another problem was the microphones. They had to be set with really high gain, so the feedback risk was quite high, and this made us lower the volumes, which led to the live amplification/electronics being too soft.

Choma: How did the ensemble make decisions about the piece's overall shape and direction in performance? Were there particular reference points or shared understandings that guided those choices?

Tuchołka: Same as above - we take decisions collectively. There are some members in the Ensemble that naturally take the leading role more often than the others (myself, Jonatan, Natalie) but in the end of the day our work is quite organic - both when it comes to details and the overall shape of the performances.

Sersam: Like mentioned, we chose different sections to be led by different members. We had "cues", accents or sound events, that guided us forward. It was quite easy actually to follow the graphic notation and we all "felt" when it was time to move on.

Choma: Did the piece change in any meaningful way between early rehearsals and the performance? If so, what contributed most to that evolution?

Tuchołka: I believe that since the matter we got to work with (amplified bubble wrap) was so new to everyone that there was not really “before” and “after”. We had to learn both the piece and the matter from scratch. The most meaningful part was learning something totally new as a group, starting from basically the same level (no one was a master of bubble wrap before that). I have a strong memory of a sense of community while practicing and recording Tonia’s piece.

Sersam: I don’t think we experienced a lot of problems. We would have needed more time for soundcheck and to work with the electronics though, since the levels were a bit off. The piece evolved a lot from the first rehearsals to the performance, but in clear phases. In my experience, this is common with this kind of piece. The first rehearsal, you discuss almost the entire time, what to do and how. The second, we start trying out, new questions arise and we solve new problems. Then third and fourth (if there is a 4th), things are in place and we feel that we can “musicalize” more, perform more than just try to make things “work”.

APPENDIX C
EMAIL INTERVIEW WITH MILENA GLIGIC, MARCH 21, 2026

Gabrielle Choma: Could you briefly describe your experience performing contemporary music, specifically works that involve unconventional sounds or extended techniques? How did your time with *Breath, Contained III* fit into that experience?

Milena Gligic: It was really fun to explore this kind of imaginative world. I've had plenty of opportunities with Contemporaneous to do unconventional and sometimes bizarre pieces. I remember that the ensemble played a Car Junk Concerto, with literal car junk pieces. In one piece I had to blow into a vacuum tube or strum the strings of the piano with the inside layer of a bicycle tire… In Tonia's piece there was an element of prepared piano - the three highest pitches were muted for a percussive effect, there was an improvised section at W, and of course the bubble wrap section at the end where all the instruments slowly switched to popping bubble wraps.

Choma: What were the main challenges in coordinating with the soloist's bubble wrap part? Were there particular moments where alignment or musical communication required specific strategies in rehearsal?

Gligic: The section between E and M was really fun, imitating popping sounds on the piano. Between M and U the challenge is to not get lost in counting. I usually pay attention to certain cues upon first listening while I'm counting the bars, and I mark those cues in the score so that I don't have to count every time. Tonia already generously marked some of those cues in, whether descriptively or via notation. It also helps that David Bloom is an incredible conductor who will not forget any performer at the time of their entrance and he will always give you a clear eye contact and a clear cue. Also, whenever I have too many ledger lines, I write the notes in letters above them. It's just faster for the brain than to always keep second-guessing. The section between TT and the second bar of VV is challenging for the ensemble because of the dynamic, tempo and meter changes all at once. You have to stay alert and visually follow the conductor, but also have a strong instinct for the ensemble and feel when the next event will happen

Choma: What was it like having Ko there as both composer and bubble wrap soloist? Were there moments where her presence influenced decisions about timing, coordination, or interpretation?

Gligic: Ko herself was easy to work with, and really made it easy for us to put her piece together, because of a very clear and professionally done score and parts, which is not always the norm.

Choma: What kinds of input, if any, did you have on your part during rehearsals? Were there moments where your feedback or input led to changes, clarifications, or adjustments in the music?

Gligic: I looked at the recording and my score, and for the life of me I can't remember anything particular from the rehearsals. The score itself looks very clear and straightforward.

Choma: Were there moments in the score that felt unclear or too open-ended during rehearsal? If so, how were they addressed by the ensemble, conductor, or composer?

Gligic: I am sorry that I can't remember much from the rehearsals. We do so many projects and we don't get to spend much time on them.

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