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The Secondary Sonata: Sonata Form in Late-Twentieth-Century Symphonic Repertoire

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Abstract

This dissertation develops an analytical tool called "the secondary-parameter network" that uses secondary parameters to define sonata form in late-twentieth-century symphonic repertoire. Instead of relying upon tonal inheritance or themes to define sonata form in the symphonies of late-century composers such as Edison Denisov, Lowell Liebermann, Einojuhani Rautavaara, Christopher Rouse, and Isang Yun, the secondaryparameter network uses changes of instrumentation, rhythms, time signature, dynamics, contrapuntal texture, and tempo to identify formal junctures. Essentially, most or all secondary parameters change at formal boundaries. The method developed here differs from those of other scholars of twentieth-century sonata-form repertoire, such as Lofthouse, Perry, and Tarrant, who employ Sonata Theory to account for the works of, respectively, Shostakovich, Prokofiev, and Nielsen. While their recalibration of Sonata Theory accounts for this mid-century repertoire well, first movements of multimovement symphonies by latetwentieth-century composers require a different approach because the idea of rotation is no longer relevant. The secondary-parameter network offers a new reading of sonata form through a ground-up construction of sonata form based on significant changes to secondary parameters.

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Chapter 1: The Secondary Sonata

Since the origins of sonata form, musicians have relied on tonal and harmonic relationships to define the form—the move from tonic to dominant, for example, that defines the exposition of a major-mode sonata form. Among the earliest musicians to discuss sonata form in great detail, Anton Reicha and A. B. Marx, both noted the significant presence of a modulation in the first section of a sonata-form movement (though not always in those terms).¹ As early as 1814, Reicha identifies a modulation from the tonic to dominant, or to minor dominant or major mediant, depending on a movement's major or minor key, respectively, as one of the main principles of the large binary form.² Marx repeated this observation by acknowledging the modulation from tonic to dominant in major keys, or from tonic to relative major in minor keys, in the "First Part" of a sonata-form movement as early as 1837.³ As functional tonality ran rampant, both music scholars defined form on a salient and consistent parameter.

However, so to speak, after Pandora's box of tonality was opened at the beginning of the twentieth century, composers no longer needed to adhere to the tonal stipulations required by sonata form in previous centuries. As a result, twentieth-century composers could choose to completely or partially follow tonal structures, or even to fully eschew them, as they followed a sonata form-like structure. Daniel Harrison's "suburbs of tonality" offer a method to capture any twentieth-century composer's relationship with tonality: a work closer to the "common practice downtown" will include linearity, meter, harmonic fluctuation, and traditional rhetoric, and a work farther from the common practice downtown will forego these

¹ Anton Reicha, *Treatise on Melody*, trans. Peter M. Landey (Hillsdale, N.Y.: Pendragon Press, 2000): 50; Anton Reicha, *Traité de haute composition musicale* (Paris: Zetter, 1824-1826): 236-261; and A. B. Marx, *Musical Form in the Age of Beethoven: Selected Writings on Theory and Method*, trans. Scott Burnham (New York: Cambridge University Press, 2007).

² Reicha, Treatise on Melody, 49.

³ Marx, *Musical Form in the Age of Beethoven*, 96.

qualities in the reverse order.⁴ Rather than fulfill compositional requirements, a twentiethcentury composer could choose where to locate his or her composition on a tonal spectrum from total engagement with to total rejection of the common practice. Thus, potential exists for conceptions of sonata form at each point within this continuum, both with and without tonal input. Though tonal conceptions of sonata form do exist in the twentieth century and analysts have employed tonal conceptions of sonata form to describe this repertoire,⁵ such an orientation is not guaranteed, and analysts must find alternative reliable methods for defining sonata form in this repertoire.

My main argument is that musical elements other than tonal structure defines sonata form in the late twentieth century, and this study reveals that sonata-form structures from this era retain many of the same characteristics and problems as their earlier (functionally tonal) counterparts. The crux of this argument is as follows: if a composer decides not to engage with tonality in any explicit or obvious way, the resultant work—which still has two or three large-scale sections that include exposition, development, and recapitulation, where the exposition includes at least two contrasting zones and the recapitulation includes reference to expositional material—must still be in sonata form. The first movements of symphonic works of composers such as Edison Denisov, Lowell Liebermann, Einojuhani Rautavaara, Christopher Rouse, and Isang Yun demonstrate these features. This dissertation investigates exactly how these works maintain sonata form.

⁴ Daniel Harrison, *Pieces of Tradition: An Analysis of Contemporary Tonal Music* (Oxford: Oxford University Press, 2016), 40-41.

⁵ Tonal conceptions of sonata form do continue in the twentieth century, and analysts have employed tonality to define sonata form. Scholars such as Charity Lofthouse, Leonard Tan, and Christopher Tarrant have successfully identified tonal areas in twentieth-century sonata forms in their research on Shostakovich, Hindemith, and Nielsen, respectively (Charity Lofthouse, "Dialogues and Dialects: Rotation and Sonata Form in Shostakovich's Symphonies," *Theory and Practice* 41 (2016): 113-139; Leonard Tan, "A Comparison of Sonata Forms in Hindemith's and Persichetti's Band Symphonies," *Journal of Band Research* 48, no. 1 (September 2012): 11-29; Christopher Tarrant, "Breakthrough and Collapse in Carl Nielsen's *Sinfonia semplice," Danish Yearbook of Musicology* 41 (2017): 32-49; and Christopher Tarrant, "Structural Acceleration in Nielsen's *Sinfonia espansiva," Music Analysis* 38, no. 3 (2019): 358-386.).

Essentially, these pieces do so by establishing intrathematic formal functions in ways consistent with tonal sonata form. Rather than employ the primary parameters of key area or harmonies, secondary parameters define interthematic formal functions in this repertoire that is, every change of interthematic formal function (or section) brings its own instrumentation, contrapuntal texture, dynamic, tempo, time signature, and rhythms. In short, the secondary-parameter network tracks the changes of multiple secondary parameters to define formal boundaries. Essentially, as tonal elements phase out from importance, secondary parameters become increasingly important to define interthematic formal functions.

I consider these six parameters to be secondary, rather than primary, because they are wholly independent of any pitch-based musical elements, such as harmony, tonality, and centricity (both primary and secondary parameters are discussed in greater detail in the "Theoretical Context" section of this chapter). The use of specific compositional procedures is also restricted to the development section—specifically, fragmentation, repetition, sequencing, layering, and faster alternation between instrumental groups manipulate materials from expositional zones. In short, these pieces flip the traditional formal relationship between tonality and secondary parameters. This dissertation capitalizes on the new power dynamic to define sonata form.

Examining these parameters offers a new way to conceptualize form in late-twentiethcentury repertoire. As mentioned above, late-twentieth-century sonata form movements consistently present three interthematic formal functions in an exposition, a development, and a recapitulation in which at least one interthematic formal function returns. When viewing late-twentieth-century sonata-form movements through a sonata-form lens, analysts of this repertoire also confront similar issues as the analysts of functionally tonal sonata-form movements, such as the relationship between the recapitulation and coda, vague formal

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boundaries, the organization of developmental sections, and the presence of the medial caesura. The continued manifestation of sonata form—and the persistence of similar analytical issues—into the end of the twentieth century reveals its continued influence, whether musicians were aware of it or not.

Though composers retain various conceptions of tonality, this project only considers pitch in a few limited circumstances (the two special cases are discussed in the Methodology section of this chapter). The approach presented here considers sonata form regardless to how close to (or far from) a given piece is with respect to Harrison's common practice downtown, so that secondary parameters (and form) do not mirror harmonic language. Even though composers retain melodic presentation to varying degrees, focusing on secondary parameters allows a more holistic approach to repertoire late-twentieth-century repertoire. In other words, composers no longer need to prioritize centricity—or even a homophonic texture—in each expositional zone.

To make these claims, I first investigate the interactions between secondary parameters and sonata form in mid-twentieth-century neoclassical repertoire, where composers sought to maintain a dialogue with the past though their use of the form. The works of composers such as Hindemith, Nielsen, Prokofiev, Shostakovich, and Stravinsky employ sonata form, and significant numbers of secondary parameters (instrumentation, timbre, texture, dynamics, tempo, time signature, and rhythm) change at formal junctions so that tonality is not necessary to understand form in their works. The aggregate of changes to secondary parameters creates a network that defines sonata form, so I call it the "secondaryparameter network." The secondary-parameter network analyzes form primarily based on secondary parameters so that, while pitch is not a primary analytical target, it often supports the secondary-parameter network's analyses. Though I discuss the secondary-parameter network in two neoclassical movements below, this application serves as a steppingstone to

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connect tonal sonata forms with late twentieth-century repertoire; the remainder of this project focuses on its reappropriation to late-twentieth-century repertoire.

The secondary-parameter network is sufficiently flexible to accurately describe the sonata-form processes of late-twentieth-century symphonic repertoire. It affords flexibility for a plethora of compositional decisions while still maintaining sonata form's underlying structure. This feature is especially important as composers may or may not have striven to or been aware of writing sonata-form movements, and as composers experimented with dense musical languages. As composers stepped away from functional tonality, other musical parameters—those examined in the present project—become increasingly important for analysis.

Following Harrison's suburbs of tonality, it is possible to create "suburbs of sonata form" to organize how similar a given sonata-form movement is to the conventionally understood archetype. The secondary-parameter network creates a sort of formal analogue to Harrison's metaphor about tonality. While it examines different parameters, both my and Harrison's approaches convey how new approaches relate back to their original structures (sonata form and functional tonality, respectively).

Definitions of the Term: Sonata Form

Modern definitions of sonata form, such as those of William E. Caplin⁶ and James Hepokoski and Warren Darcy⁷ are based on eighteenth-century repertoire, and scholars' extrapolations from these analytical systems for twentieth-century repertoire has the potential to cause a number of analytical problems. First, when scholars draw on Sonata Theory, they

⁶ William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998).

⁷ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006).

primarily confine themselves to studying deformations and rotations. While research has demonstrated that a Sonata Theory-based approach is fruitful for mid-twentieth-century repertoire, the presence of additional analytical tools would provide a complementary perspective. Additionally, a number of anachronistic issues arise when scholars project a historical term onto later musical bodies. The option to avoid functional tonality allows composers to explore new formal structures, which scholars compare back to the functionally tonal sonata form with less consideration as to how other themes or sections contribute to the creation of sonata form in late twentieth-century repertoire. In other words, Sonata Theory's convenience allows musicians to assume that movements in particular contexts (i.e., the first movements of multimovement symphonies and concerti) embody sonata form, without providing analytical rational for this assumption. I will discuss these potential issues before exploring some benefits that the secondary-parameter network offers.

Scholars such as Charity Lofthouse, Christopher Tarrant, and Rebecca Perry, who respectively study the works of Shostakovich, Nielsen, and Prokofiev to examine how midtwentieth-century symphonic structures relate to sonata form. These scholars employ Sonata Theory to describe structural differences between their analytical subjects and tonal sonata form as "deformations."⁸ Essentially, a movement is heard against a normative backdrop of standard compositional options that define the sonata process, and each sonata-form movement "enter[s] into a dialogue with an intricate web of interrelated norms as an ongoing action in time."⁹ Sonata Theory allows scholars to understand how a particular movement does and does not embody the form's standard progression; all sonata-form movements contribute to the genre of sonata form so that all sonatas are assessed against their aggregate formal structure. A strength of the scholarship by Lofthouse, Tarrant, and Perry is that

⁸ Hepokoski and Darcy, *Elements of Sonata Theory*, 10.

⁹ Hepokoski and Darcy, *Elements of Sonata Theory*, 10.

Shostakovich, Nielsen, and Prokofiev sought connections to Classical-era music, so that sonata-form structures in their works can be expected and identified based on theme and harmonic area.

Lofthouse locates Shostakovich as a composer whose sonata-form movements "display many of the same innovations and deformational techniques featured in works by Sibelius, Mahler, and Bruckner. Yet his tendency is to stretch formal boundaries even further, building on tonal, thematic, rhetorical, and rotational aspects of these deformational techniques."10 She recalibrates Sonata Theory to explain several structural peculiarities in Shostakovich's symphonies: his "double- and triple-rotational structures," use of deformations to attenuate expected sonata markers, and use of "intra-sectional rotations."¹¹ The first movement of Shostakovich's Seventh Symphony clearly demonstrates a doublerotational structure until the end of the movement, when the inclusion of "opening and postopening thematic module[s]" and the coda "presents yet another P/S rotation."¹² The inclusion of opening and thematic materials in these locations blurs the boundaries between double- and triple-rotational structures. The fourth movement of Shostakovich's Fifth Symphony "simultaneously employs several deformational techniques," including the lack of medial caesura, writing S in P's texture and tempo, and reworking S for each rotation.¹³ Finally, his intra-sectional thematic rotations allow two to six themes as a large-scale loosening technique to delay the end of a theme zone.¹⁴ Lofthouse presents compelling

¹⁰ Lofthouse, "Dialogues and Dialects": 114.

¹¹ Charity Lofthouse, "Rotational Form and Sonata-Type Hybridity in the First Movement of Shostakovich's Fourth Symphony" (PhD diss., City University of New York, 2014); and Lofthouse, "Dialogues and Dialects": 114.

¹² Lofthouse, "Dialogues and Dialects": 120-121.

¹³ Lofthouse, "Dialogues and Dialects": 129.

¹⁴ Lofthouse, "Dialogues and Dialects": 135.

analyses of Shostakovich's symphonies, but the basis of her work in Sonata Theory causes her to explain Shostakovich's innovations as deformations.

In a similar way, Tarrant recognizes the need of a new analytic model for Nielsen's symphonies and identifies Sonata Theory as a convenient way to connect his Third Symphony to the symphonic sonata tradition, in part because Nielsen viewed this symphony to be part of the "Brahmsian tradition."¹⁵ He argues that the second half of the first movement of this symphony demonstrates "structural acceleration" through its overriding of and failure to reclaim generic markers, such as the return of S and the ESC.¹⁶ The first movement of Nielsen's Sixth Symphony provides an example of the "failed breakthrough" deformation, where the first movement is "about a broken structural order" so that tonality is no longer reliable.¹⁷ Tarrant, like Lofthouse, employs Sonata Theory to analyze twentieth-century repertoire, basing his analyses on structural differences with the traditional tonal form.

Perry retains this perspective to analyze Prokofiev's early sonata-form movements, but acknowledges that Hepokoski and Darcy initially intended Sonata Theory for the analysis of Viennese classical style.¹⁸ Along with her recognition of this disjuncture, she presents a perspective more sympathetic to a ground-up view by examining how Prokofiev's interpolations interrupt and affect sonata structures to promote a more nuanced view of his formal structures.

¹⁵ Tarrant, "Structural Acceleration": 361.

¹⁶ Tarrant, "Structural Acceleration": 359; 378.

¹⁷ Tarrant, "Breakthrough and Collapse": 34, 41-42.

¹⁸ Rebecca Perry, "Thematic Idiosyncrasy in Prokofiev's Early Sonata Forms" (PhD diss, Yale University, 2017), 22; Rebecca Perry, "Between the Signposts: Thematic Interpolation and Structural Defamiliarization in Prokofiev's Sonata Process," *Music Theory Spectrum* 42, no. 2 (Fall 2020): 193-206; and Rebecca Perry, "House of Mirrors: Distorted Proportions in Prokofiev's Piano Concerto No. 1," in *Analytical Approaches to 20th-Century Russian Music*, ed. Inessa Bazayev and Christopher Segall (New York: Routledge, 2021), 54-70.

Perry reassesses Prokofiev's sonata form innovations in terms of "thematic interpolations, superimpositions, truncations, and displacements," all of which Prokofiev incorporates while "very often walk[ing] dutifully past all the expected signposts of sonata form."¹⁹ Interpolated passages, such as that which occurs in mm. 8-19 of the P theme of Prokofiev's Piano Sonata No. 2/i, Op. 14 (1912), can often feature new motivic material, secondary parameters, and "harmonic construction and tonal orientation."²⁰ In his Piano Concerto No. 1, Op. 10 (1912), Prokofiev's "extreme prioritization" of the opening introduction and piano cadenza and interpolated *Andante assai* movement catch the listener off guard and even "defamiliariz[e]" him or her.²¹ Even though Perry has a new perspective to describe how Prokofiev constructs his sonata-form movements, she still takes the form as self-evident.

These scholars' studies of neoclassical repertoire via Sonata Theory are very productive, but their reliance on this method orients their analyses in particular ways. First, it is noteworthy that these scholars tend to focus on twentieth-century sonatas' differences with functionally tonal sonata form, rather than what these sonatas do to promote their structural ties to the genre. Hepokoski and Darcy's Sonata Theory lends itself well to application of other repertoires due to generic form, and this allows scholars to broaden their analytic horizons; but, even though the concept of "deformations" requires similarity as well as difference, Sonata Theory biases scholars to look for structural differences with functionally tonal sonata form. The result is that we have a negative understanding of what these sonatas do—that is, how these sonatas' structures differ from that of the traditional sonata form. As

¹⁹ Perry, "Thematic Idiosyncrasy," 171.

²⁰ Perry, "Between the Signposts": 197.

²¹ Perry, "Distorted Proportions in Prokofiev," 54-55.

mentioned above, the works of Shostakovich, Nielsen, and Prokofiev represent a midtwentieth-century school of thought that retained explicit connections to the Classical style, and a historically-rooted account of sonata form very well accommodates repertoire in which composers sought to retain historical ties. However, as the twentieth century progressed, the historical impulse that was so prevalent in neoclassicism became increasingly obscure or abandoned. How might this post-neoclassical repertoire retain ties to the sonata genre, in terms that are not as explicit?

It is also problematic to compare repertoire that does not rely on functional tonality to a form that is underpinned by it. If a composer chooses to have minimal engagement with functional tonality, her composition is more likely to stray from a strict tonal path—must she compose a recapitulation with S's satisfying modulation from the dominant to the tonic, if those key areas do not exist? Arnold Schoenberg presents one possible solution in his *Klavierstück*, Op. 33a, where both themes from the exposition and recapitulation use row form P_{10} .

A different composer might select a different recapitulatory strategy that could present a so-called deformation based on current scholarship's definitions, but what if the composer has chosen to engage with a different game,²² so to speak—say, to wholly forgo any conception of tonality? A more helpful analytical tool would allow compositional freedom to experiment with formal aspects while also providing an alternative foundation for musical structure. A functionally tonal model of sonata form will not support repertoire in which composers have the option to write, for an imaginary example, an expositional Gmajor P theme and C[#]-minor S theme, and a recapitulatory B-minor P theme and an A-minor

²² See Hepokoski, *Sibelius*, 5, for discussion of musical genre as a game.

S theme; and it would be convenient if the same model could account for less exaggerated tonalites.

Finally, by taking sonata form for granted, these scholars overlook the form's construction in the late twentieth century—what makes these repertoires good candidates for dialogic form with the sonata, other than their identities as first movements of symphonies or concerti? To build a truly convincing case, analysts must define why a passage of music is P, TR, or S, as well as demonstrate how these themes' behaviors through the movement exemplify that of sonata form. This perspective is necessary because late-twentieth-century composers have the viable compositional option to eschew all tonal relationships, rendering examination of tonal parameters a less pertinent analytical move than it might have been in studying earlier repertoires, even if just thirty years earlier.²³ In other words, analysis of twentieth-century repertoire cannot be reliably done by examining tonal parameters, as has been a consistent method for sonata analysis in repertoires of previous centuries, and even (though to lesser extent) in the twentieth century.

Even though secondary parameters provide a productive avenue for analytic application to twentieth-century repertoire, scholars focusing on this music within the sonata genre tend to only mention secondary parameters in passing so that they can focus on other issues. As discussed above, this is partially a consequence of their reliance upon Sonata Theory and its concerns because prioritizing secondary parameters present no obvious, overwhelming analytical benefits to their projects. Perry is the most sympathetic to secondary parameters, as she relies on them to assist with her analyses.²⁴ However, all scholars (Perry

²³ Exceptions include Charity Lofthouse, "Dialogues and Dialects," where the author identifies tonal relationships in the first movements of Shostakovich's First, Fifth, Seventh, Nineth, and Tenth Symphonies; Tarrant, "Structural Acceleration" and "Breakthrough and Collapse" on Nielsen's Third and Sixth Symphonies, respectively; and Leonard Tan, "A Comparison of Sonata Forms in Hindemith and Persichetti's Band Symphonies." It is interesting to note that Lofthouse includes analyses of first, fourth, and fifth movements throughout her article, and it is only the first-movement examples that follow the typical key layouts of tonal sonata forms.

²⁴ See, for several examples, Perry, "Thematic Idiosyncrasies," 15; and "Between the Signposts": 193 and 197.

included) tend to assume that others agree with their designations about where new themes begin and what constitutes a theme. In other words, scholars define sonata form largely without exploring why a theme is what they say it is. As previously mentioned, this approach works well for the repertoire of mid-twentieth-century composers with a historical bent, such as Shostakovich, Prokofiev, and Nielsen, but has limitations when applied to movements without this approach. Making these assumptions explicit by focusing on secondary parameters before (though in addition to) studying the consequences of various compositional decisions emphasizes all works' identities as constituents of the sonata genre.

Additionally, this trio of composers all participated in the neoclassical impulse, which means that they sought to write recognizable sonata-form movements. Lofthouse, Perry, and Tarrant do not need to uncover sonata form for their analyses because their composers are more explicit with their intentions. Sonata Theory applies them with a framework and terminology to explain how and why structural deviations occur in the repertoire they study.

In contrast, in the late twentieth century, the neoclassical historicizing impulse decrease and even disappeared: repertoire from the end of the twentieth century has no reason to assume sonata form's presence. The examination of this later repertoire requires a new analytical tool that will uncover sonata form. In response, this dissertation develops such a tool that can excavate sonata form where composers may or may not have intended to invoke it. The definition of late-twentieth-century sonata form that I build here is based on how secondary parameters shape sonata-form processes, along with techniques of development and transition. My goal is, in some ways, opposite those of other twentieth-century formal scholars: this project seeks to know exactly how late twentieth-century sonatas adhere to the patterns established by tonal sonata form before exploring their structural differences. This dissertation seeks a ground-up account of why this repertoire belongs to the sonata genre, rather than taking this identity as self-evident. In other words, this project seeks to make

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explicit what prior scholars have taken as implicit—that symphonic first movements in the twentieth century retain sonata-form status. The late twentieth century offers engaging repertoire for this project because movements written during this time do not need to present clear-cut sonata-form movements.

In the following chapters, I create an explicit account of how late-twentieth-century repertoire belongs to the sonata genre. This project emphasizes late-twentieth-century symphonic repertoire because I want to know exactly how and to what extent this repertoire continues the tradition of sonata-form first movements, and seeks to update formal terminology to fit works by composers of the late-twentieth-century generation to address this question. The study of late-twentieth-century repertoire necessitates a new methodology that eschews any tonal implication or structural inheritance other than the basic P, TR, S, and exposition, development, recapitulation structure.

Removing Sonata Theory from a fundamental analytical level liberates this dissertation from the ideas of compositional norms, levels of default, and deformations inherent to this approach, though this perspective invites a type of dialogic form with a generic (general) sonata form. Instead, analyses completed by the secondary-parameter network articulate how symphonic repertoire continues the tradition of the sonata-form first movement. Establishing what constitutes P, TR, and S in the exposition clearly identifies a piece to be in dialogue with the sonata genre, and it is only from this location that a scholar can best understand a piece's identity with respect to the genre. Approaching these structural changes through the perspective of what these sonata forms do better aligns them with the sonata genre before exploring their abnormalities, and musical structures that might have previously been taken as anomalies and considered to be deformations now present a different way of embodying sonata form. By offering a long-needed historical update to the

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definition of "sonata form," this dissertation also repairs the rift of time between the definition and its target repertoire.

Lofthouse's, Perry's, and Tarrant's discussions of sonata form in mid-twentiethcentury repertoire demonstrate that the genre was alive and well in the twentieth century, and that composers began to divorce the form from its functionally-tonal inheritance. Tarrant discusses how the first movement of Nielsen's Third Symphony explores a type of fifth-space that includes tonal areas in Ab-major and Eb-major, in an overall D-major movement.²⁵ Lofthouse demonstrates how Shostakovich uses the set class (012479) for significant cadences in his Fourth Symphony.²⁶ My findings demonstrate that composers continually updated sonata form throughout the twentieth century, so that, even when composers jettisoned tonal relationships, invoking and retaining the vocabulary of traditional sonataform elements reinforces late-twentieth-century repertoire's underlying sonata-form structure. The consistencies will be discussed at length below, but put briefly: expositions still include P and S zones that demonstrate tight- and loose-knit features, respectively, and the TR with energy-gain; developments fragment and mix expositional materials; and recapitulations present some return of previous material.

Theoretical Context: Secondary Parameters

The following discussion builds the case for a definition of sonata form based on secondary parameters. I explore analytical approaches that do not necessarily focus on sonata form to set a precedent for this approach, and I define what secondary parameters are for the scope of this project.

²⁵ Tarrant, "Structural Acceleration": 371-372.

²⁶ Lofthouse, "Rotational Form": 145-146.

The definitions posited by Caplin and Hepokoski and Darcy are founded on the underlying functionally tonal relationships of target repertoires. This fact directly contrasts with the outlook of many composers in the twentieth century, when composers could choose the extent to which they wanted to engage with tonality. Harrison's "suburbs of tonality" captures composers' choices as to how tonal they want their work to be, so sonata form no longer needed to be tonal. Composers could choose to write a tonal sonata form (see ftnt. 9), but this was not the only option, by any means.

Andrew Mead notes the relationship between tonality and form:

While the forms of tonal music are dependent upon tonal relationships, the variety of formal strategies, as well as the variety of strategies manifested in movements of like form, attests to the flexibility of the tonal system to articulate compositional strategies. Tonality provides a system of measurement and differentiation along with a hierarchy of relationships that allows one to create a variety of different strategies for making music. These strategies in particular are the pieces themselves; their shared characteristics tend to get abstracted as "forms."²⁷

Formal strategies originate in the tonal system's flexibility, and the pieces become strategies and shared characteristics evolve to become form. (Wennerstrom notes the difference between "form" and "forms" as many as twenty years prior, a fact which shows that these ideas have been under consideration for some time.²⁸) Mead argues that the same holds true for Schoenberg's twelve-tone system: formal strategies, in twelve-tone music, are also contingent upon that system's flexibility, and these strategies may overlap with those of the tonal system.²⁹

However, what about twentieth-century music that is not twelve-tone? As Harrison's suburbs of tonality make explicit, the twelve-tone method was just one way to organize a

²⁷ Andrew Mead, "'Tonal' Forms in Arnold Schoenberg's Twelve-Tone Music," *Music Theory Spectrum* 9, no. 1 (Spring 1987): 67-92.

²⁸ Mary Wennerstrom, "Parametric Analysis of Contemporary Musical Form," PhD dissertation, Indiana University, 1967.

²⁹ Mead, "'Tonal' Forms in Arnold Schoenberg's Twelve-Tone Music": 91-92.

composition, and composers had a myriad of other options from which to choose. As demonstrated by Mead's work on sonata form in Schoenberg, a composer's choice to engage with sonata form must not be based on a piece's relationship with tonality—in other words, a composer in any tonal suburb can choose how he or she engages with sonata form. Another way to put it, following Harrison's template, is that there exist suburbs of sonata form in the twentieth century, in addition to the suburbs of tonality, and a piece's location in one suburb set is not contingent upon or related to its location in the other. Following this metaphor, this dissertation's goal is to probe the various suburbs of sonata form.

Understanding the separation of the respective suburbs of tonality and sonata form leads to other questions: How are twentieth-century sonata forms structurally similar to their tonal counterparts? As a deeply entrenched musical entity through the nineteenth century, how did sonata form continue in the twentieth century, when composers no longer needed to follow the tonal structures inherited from previous centuries? What other entities can analysts use to define how sonata form functions in the twentieth century? To best engage with these questions, scholars need new ways to define sonata form, especially for those interested in twentieth-century repertoire.

Several analysts employ parametric analysis to define form to create bottom-up accounts of form in the twentieth century. Wennerstrom examines the relationships between pitch, dynamics, duration, texture, and timbre to "reveal[] structured patterns" that build form in ten compositions that date from the mid-1900s.³⁰ For her, form is built on the relationships between specific parameters at various structural levels. Howland reveals five types of "integrated parametric structures" based on how they create coherence (tension/release, departure/return, symmetric, directional, and steady-state).³¹ Howland bases her definition of

³⁰ Wennerstrom, "Parametric Analysis of Contemporary Musical Form," 25-26, 24.

³¹ Patricia Howland, "Formal Structures in Post-Tonal Music," *Music Theory Spectrum* 37, no. 1 (Spring 2015): 71.

"parameter" on James Tenney's 1988 definition and thus includes both primary ("pitch and duration," per Leonard B. Meyer) and secondary parameters.³² Though these authors write over forty-five years apart, it is important to note that Wennerstrom and Howland both examine avant garde repertoire: that of Babbitt, Boulez, Carter, Stockhausen, and the like. They do not discuss sonata form in this repertoire, but their work nonetheless remains an important step in researching twentieth-century musical form.

Wennerstrom and Howland discuss parameters in post-tonal repertoire, where all musical parameters are of equal performance. Leonard B. Meyer was the first scholar to distinguish between primary and secondary parameters. He cites pitch and rhythm as primary parameters and other musical events as secondary parameters.³³ What this means, though, is that the definition of "parameter" fluctuates with the repertoire that scholars study. Because the current project examines neither post-tonal nor tonal repertoire, I develop alternative definitions of "primary" and "secondary" parameters to better fit late-twentieth-century symphonic repertoire.

For the scope of this project, I define six secondary parameters for the secondaryparameter network: instrumentation, tempo, time signature, rhythms, texture, and dynamics. I call these parameters "secondary" because these musical parameters are independent of any pitch-based parameters. In this regard, my definition differs from Meyer's original distinction between primary and secondary parameters, which is based on syntactic organization.³⁴ In

³² Howland, "Formal Structures in Post-Tonal Music": 71, n.s 4 and 2. Tenney defines "parameter" as "any distinctive attribute of sound, in terms of which one (elementary) sound or sound-configuration may be distinguished from another" and identifies the musical parameters "pitch, loudness, timbre, duration, temporal density, vertical density, and time-envelope" as the seven that are "most often involved in musical analysis" (James Tenney, *META* + HODOS and META Meta + Hodos: A Phenomenology of 20th-Century Musical Materials and an Approach to the Study of Form, 2nd ed. (Baltimore, Smith Publications, 1988), 92).

³³ Leonard B. Meyer, *Style and Music: Theory, History, and Ideology* (Philadelphia: University of Pennsylvania Press, 1989), 14. Meyer bases his distinction on human perception and musical syntax, so that pitch and duration are primary parameters and all other parameters are secondary (14).

³⁴ Meyer, *Style and Idea*, 14.

taking secondary parameters for the basis of its analyses, the secondary-parameter network reverses the usual relationship between primary and secondary parameters so that secondary parameters are collectively more important than a note's identity. In this regard, I embrace the ironic naming of the secondary-parameter network.

The secondary-parameter network employs these parameters because this group is most efficient at defining and analyzing sonata form in mid- and late-twentieth-century sonata forms. These parameters are most likely to change at formal boundaries in some configuration. This said, the six secondary parameters that I employ throughout this dissertation are not exhaustive—timbre and articulation are two other secondary parameters that I do not consider in my analyses. I omit contour from the list of secondary parameters under consideration here because it is not consistently helpful for analysis, but I invoke it in a few instances where it is helpful. It is also possible that another analyst will examine the same repertoire incorporated into this project and find that a completely different set of secondary parameters will work equally well for analysis. In other words, the list of secondary parameters under consideration by the secondary-parameter network can be malleable based on both the analyst and her target repertoire. An analyst could choose to incorporate pitch-based considerations, but I see a unique opportunity to study the goings-on of instrumentation, tempo, time signature, rhythms, texture, and dynamics in this repertoire, and I seek to elevate their importance.

I define primary parameters as pitch, tonality, centricity, and harmony because most examinations of tonal music focus on these issues. As composers moved away from functionally tonal music, pitch-based parameters can still define form, but a novel opportunity arises for other (here called secondary) parameters to mark form. Because pitch is so important, though, it is nearly impossible to completely eschew it from analysis. I occasionally invoke it as a supporting consideration for analysis completed primarily through

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the secondary-parameter network. More importantly, though, the secondary-parameter network allows the consideration of pitch in particular circumstances through the presence of motives and tropes. Motives and tropes allow for the important distinguishment of various motives within a movement and patterns of closure across multiple movements, respectively, but these avoid assigning any pitch-based effects—such as centricity, collection, and harmony—to formal processes. The secondary-parameter network's omittance of pitch for primary analytical study reflects how late-twentieth-century sonata-form movements does not need to have an overarching pitch-based narrative in the same way as did functionally-tonal movements.

Christopher Brody creates a "ternary plot" that captures the equal importance of thematic and harmonic perspectives in functionally tonal repertoire.³⁵ Figure 1 (a reproduction of Brody's Figure 9) shows how the ternary plot derives from two perpendicular continuums of tonal structure and thematic design (horizontal) and matrix (parametric independence) and schema (parametric correlation) (vertical).³⁶ Because schema requires equality between tonal structure and thematic design, Figure 2 (a reproduction of Brody's Figure 10) shows how the upper corners collapse to create an equilateral triangle ternary plot.³⁷ The resulting ternary plot graphs tonal structure, thematic design, and their correlation. Brody's ternary plot allows him to assess scholars' values of tonal structure versus thematic design and to compare stereotypes of baroque, classical, and romantic musical eras.

³⁵ Christopher Brody, "Parametric Interactions in Tonal Repertoires," *Journal of Music Theory* 60, no. 2 (October 2016): 102.

³⁶ Brody, "Parametric Interactions in Tonal Repertoires," 119.

³⁷ Brody, "Parametric Interactions in Tonal Repertoires," 120.



Figure 9. The two linear continuums from Figures 1 and 2 placed at right angles, as the two axes of a Cartesian plot

Figure 1. A reproduction of Brody's Figure 9. The ternary plot originates in two perpendicular continuums that represent tonal structure and thematic design (horizontal), and their independence and correlation (vertical).



Figure 10. The upper corners of Figure 9's Cartesian plot "collapse inward" to a single point, excluding the illogical point *P*

Figure 2. A reproduction of Brody's Figure 10. The ternary plot is created when the upper corners fall away to exclude illogical points and create an equilateral triangle.

Ben Duane's study of texture in Schubert's music demonstrates how a secondary

parameter might guide analysis. Duane's examination of texture helps him to determine

formal function, which then allows him to understand how Schubert's three-key expositions

work with greater precision by assessing the function of a third key area in Schubert's

expositions.³⁸ Duane's work is significant for this investigation because he employs texture to suggest thematic function—that is, that primary and secondary themes often have fewer "textural strands" and employ one instrument, while transitions tend to be more contrapuntal or imitative and to have more textural strands and less information content than themes.³⁹ As will be discussed in the following chapters, these patterns continue in mid-to-late-twentieth-century repertoire, and other secondary parameters also have distinct formal functional tendencies.

To summarize the above discussion: scholars have studied tonal sonata form and structural deformations in twentieth-century sonata form (based on these tonal models), secondary parameters in twentieth-century repertoire, and the interaction between secondary parameters and sonata form in tonal repertoire. A lack of scholarship exists at the intersection of these avenues of research: twentieth-century sonata form as defined by secondary parameters. This dissertation aims to fill this gap in literature to engage with questions regarding sonata form's operations in late twentieth-century repertoire: What structural inheritances do these movements retain, with or without their composers' intentions? How do these first movements of late-twentieth-century symphonies continue the tradition of sonata form? On what other parameters can we analyze form?

To answer these questions, this dissertation examines select symphonic first movements by Edison Denisov, Lowell Liebermann, Einojuhani Rautavaara, Christopher Rouse, and Isang Yun for sonata form as defined by secondary parameters, such as meter, texture, tempo, beat, and instrumentation. As will be demonstrated below, these secondary

³⁸ Ben Duane, "Thematic and Non-Thematic Textures in Schubert's Three-Key Expositions," *Music Theory Spectrum* 39, no. 1 (Spring 2017): 36-65.

³⁹ Duane, "Thematic and Non-Thematic Textures in Schubert's Three-Key Expositions": 44. On the differences between standard musical textures in terms of textural strands, Duane states: "Polyphony differs from monophony, for example, by containing more than one strand. And homophony differs from polyphony by making one of these strands more prominent than the others" (39).

parameters indicate changes between interthematic formal functions that follow the trajectory of sonata form: exposition, including P zone, TR, and S zone; development; and recapitulation. I first examine how secondary parameters define form in mid-century neoclassical repertoire before applying these trends to the later repertoire. I draw on terminology and the idea of "dialogic form" from Sonata Theory,⁴⁰ and I also rely on Caplin's theory of formal functions.⁴¹ As will be evident throughout this dissertation, both theories offer insight into the structure of late twentieth-century sonata forms.

Essentially, what are traditionally called "themes"—the P and S zones—have contrasting character, rhythms, instrumentation, tempo, and texture, and respectively demonstrate tight- and loose-knit features; and transitions manifest energy-gain through faster tempo and/or rhythms, are more contrapuntally complex, and often conclude with a medial caesura. The secondary-parameter network does not identify themes, per se, but each expositional zone has its own conglomeration of secondary parameters that the secondaryparameter network does recognize. Even though expositions contain three interthematic formal functions, I prefer to call these "zones" for two reasons. First, a theme can be interpreted as a melody, and not all repertoire under this project's purview includes clear melodies. Second, a theme under Caplin's definition requires initial, mediating, and ending formal functions, and these are not always clear in late-twentieth-century repertoire.⁴²

Developments are often based on expositional motives and include fragmentation, repetition, sequencing, layering, and faster alternations between instrument groups. The secondary-parameter network recognizes these techniques in a similar way to how it handles

⁴⁰ Hepokoski and Darcy, *Elements of Sonata Theory*, 10.

⁴¹ Caplin, Classical Form.

⁴² Caplin, *Classical Form*, 257. Maler works towards constructing a theory of formal function in post-tonal repertoire (Anabel Maler, "Hearing Form in Post-Tonal Music," (Ph.D. diss., University of Chicago, 2018); Anabel Maler, "Listening to Phrase Structure and Formal Function in Post-Tonal Music," *Intégral* 35 (2022): 45-68).

intrathematic zones: it identifies consistencies between expositional and developmental material to determine the latter's original context, and detects their new contexts through observation of shorter musical units (fragmentation and sequencing), contrapuntal texture (layering), and overall presence of more instruments (faster alternations between instrument groups).

Recapitulations include the return of or allusion to any number of zones from the exposition, but do not need to restate the whole exposition. The secondary-parameter network identifies which interthematic formal functions may return. Using secondary parameters in this way allows me to define why each formal structure is what it is—why a movement begins with P, what parameters change at a specific moment to define the TR, etc.

It is only after defining the interthematic formal functions through secondary parameters that I can analyze structural differences with the traditional (tonal) sonata form. There are several consistent structural differences in late-twentieth century symphonic sonata forms. "Permeable boundaries" often occur between zones or sections, so that the new formal function interrupts the previous formal function. The new section does not start at the end of the old section, but it also does not fully begin at its first statement. Micropolyphony, instead of melodies, can now manifest for an interthematic formal function, and secondary parameters conveniently distinguish between P, TR, and S zones. Developments can have their own trajectories and provide climactic moments. These large-scale strategies, along with others, will be discussed throughout this dissertation, but always in conjunction with secondary parameters that maintain these pieces' locations within the sonata genre.

Existing Literature: Sonata Form

In what follows, I return to discussions of sonata form in the twentieth century to better contextualize the secondary-parameter network and the benefits of its application to

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sonata form. I focus on the evolution of James Hepokoski's rotational form and two critiques of its tonal iteration, and offer Steven Vande Moortele's two-dimensional sonata form as an analytical method that avoids the temptation of deformations.

Hepokoski is widely recognized as the first to discuss rotational form.⁴³ His first introductions of the idea of "deformations" occurred earlier, though, in his essays on Verdi and Strauss (1989 and 1992, respectively).⁴⁴ However, deformations are both more thoroughly explained and married with the concept of "rotational form" in his 1993 book on Sibelius's Fifth Symphony (1915; revised 1916 and 1919).⁴⁵ Deformations and rotations have since retained their related status in later scholarship—namely, in *Elements of Sonata Theory*.⁴⁶

On the one hand, the notion of deformations relates any piece of repertoire back to a genre so that any "strikingly nonnormative individual structure" retains a relationship with some standard formal genre—such as sonata form, rondo form, etc.⁴⁷ Hepokoski's discussion of Verdi's deformations concisely captures how deformations ought to work: Verdi's deformations are "part of a carefully considered strategy to enhance the expressive potential" of generic norms by "invok[ing] the conventions repeatedly, set[ting] them in place, stress[ing] their conventionality and then, when appropriate, deform[ing] them 'affirmatively' in order to make them speak with resonant clarity, to harness their affective (or generic)

⁴³ Michael J. Puri, "Rituals of Circularity: On the Conceptual Underpinnings of Rotational Form" (paper presented at the 44th annual meeting of the Society for Music Theory, online, November 4-7, 2020).

⁴⁴ James A. Hepokoski, "Genre and Content in Mid-Century Verdi: 'Addio, del passato' ("La Traviata", Act III)," *Cambridge Opera Journal* 1, no. 3 (November 1989): 249-276; and James Hepokoski, "Fiery-Pulsed Libertine or Domestic Hero? Strauss's *Don Juan* Reinvestigated," in *Richard Strauss: New Perspectives on the Composer and His Work*, ed. Bryan Gilliam (Durham: Duke University Press, 1992), 135-175; see especially p. 149.

⁴⁵ James Hepokoski, *Sibelius: Symphony No.* 5 (Cambridge: Cambridge University Press), 6-7.

⁴⁶ See especially Hepokoski and Darcy, *Elements of Sonata Theory*, Appendix 2, 611-621.

⁴⁷ Hepokoski, "Fiery-Pulsed Libertine": 143.

connotations."⁴⁸ Deformations are thus rooted in and must be understood through the normative practices of a genre. When a deformation occurs, the analyst must first decide which "generic traditions" a piece is in dialogue with before "discover[ing] the principles that shape[] these traditions into a unique but still coherent process guided by both musical and poetic logic."⁴⁹ Composers can use a variety of compositional principles to create sonata-form deformations, which, for sonata form, include "the breakthrough deformation," "the introduction-coda frame," "episodes within a developmental space," "various strophic/sonata hybrids," and "multimovement forms in a single movement."

On the other hand, the idea of rotation is based on Russian compositions (Hepokoski notes Glinka's *Kamarinskaya* (1848) in particular⁵⁰) and Sibelius developed it so that it could "take over an entire extended section or movement" and ultimately become a compositional process.⁵¹

Strictly considered, a rotational structure is more of a process than an architectural formula. In such a process Sibelius initially presents a relatively straightforward "referential statement" of contrasting ideas. This is a series of differentiated figures, motives, themes, and so on (which themselves, of course, unfold according to the principles of content-based forms, although they may also be arranged to suggest such things, for example, as a sonata exposition.) The referential statement may either cadence or recycle back through a transition to a second broad rotation. Second (and any subsequent) rotations normally rework all or most of the referential statement's material, which is now elastically treated. Portions may be omitted, merely alluded to, compressed, or contrarily, expanded or even "stopped" and reworked "developmentally."⁵²

⁴⁸ Hepokoski, "Genre and Content in Mid-Century Verdi": 255.

⁴⁹ Hepokoski, "Fiery-Pulsed Libertine": 144.

⁵⁰ Hepokoski, Sibelius, 24.

⁵¹ Hepokoski, *Sibelius*, 24-25.

⁵² Hepokoski, *Sibelius*, 25.
Even though deformations and rotations can be analytically employed independently, Hepokoski originally applied their combination to twentieth-century symphonic repertoire.⁵³ He, and Darcy, allow rotational form to "overrid[e]" the sonata-form structure to yield rotations that function as exposition, development, and recapitulation: rotations possess a rhetorical function that balances the sonata principle's tonal function.⁵⁴ Rotational structure thus became paramount to a functionally tonal sonata form's rhetorical structure in Sonata Theory.

As already discussed, Lofthouse, Perry, and Tarrant often use Sonata Theory as a starting point for their analyses, even though Hepokoski and Darcy promote it as a theory of functionally tonal music. These scholars want to use deformations and rotations as analytical tools, but there is no other holistic analytical method that includes them. Thus, ironically, even though Lofthouse, Perry, and Tarrant go through Sonata Theory to access these analytical tools, they reallocate these tools to apply them to twentieth-century music—that is, to repertoire intended for these tools in Hepokoski's previous publications on deformations and rotations.

Two scholars in particular have discussed this disjunction: Tarrant notes how deformations and rotations originally applied to modernist (twentieth-century) repertoire, and Wingfield analyzes the ways in which these concepts do not sit well when applied to Hepokoski and Darcy's repertoire of choice (late-eighteenth-century repertoire). Together, the issues identified by Tarrant and Wingfield substantiate and magnify Lofthouse's, Perry's, and Tarrant's reappropriations of Sonata Theory for twentieth-century repertoire.

⁵³ Darcy's studies of rotational form in the "Andante moderato" of Mahler's Sixth Symphony follows this trend (Warren Darcy, "Rotational Form, Teleological Genesis, and Fantasy-Projection in the Slow Movement of Mahler's Sixth Symphony," *Nineteenth-Century Music* 25, no. 1 (2001): 49–74).

⁵⁴ Darcy, "Rotational Form": 52-54; and Hepokoski and Darcy, *Elements of Sonata Theory*, 16-19; 612.

Of Hepokoski's use of deformations in *Elements of Sonata Theory*, Tarrant writes that "Hepokoski's work on formal deformations, however, can be traced at least as far back as the early 1990s with his publication of Sibelius: Symphony No. 5, his first attempt at setting out five distinctive 'reassessed compositional principles' relating to Sibelius's generation of composers."55 He opines on Hepokoski's turn to classical repertoire: "The decision that such concepts as 'deformation' and 'rotational form' were fundamental to an understanding of Mozart's and Haydn's music, and that they did not, after all, have anything particularly to do with modernism, represented a major turning point in Hepokoski's theory of form away from the 1865 generation of early modernists and towards a more homogeneous repertoire of Viennese classics."56 Indeed, Hepokoski does first introduce these concepts together in scholarship on twentieth-century instrumental music, so, without any significant retraction of this approach, that it would seem that these best apply to this repertoire. Furthermore, he states, "a more productive goal of analysis would be to uncover a 'modern' composition's ambiguities," indicating that deformations and rotations serve to augment this repertoire.⁵⁷ Tarrant, with Hepokoski's own support, can thus justify his application of ideas from Sonata Theory to his study of Carl Nielsen's Sinfonia semplice, as discussed above, and this further emphasizes his point that the ideas of "deformation" and "rotational form" better apply to twentieth-century repertoire.

Paul Wingfield approaches Sonata Theory from the opposite perspective: in his review essay for *Music Analysis*, he considers the extent to which Sonata Theory fulfils its promise.⁵⁸ He argues that the idea of rotation does not apply well to a (tonal) sonata's

⁵⁵ Tarrant, "Breakthrough and Collapse": 32.

⁵⁶ Tarrant, "Breakthrough and Collapse": 32-33.

⁵⁷ Hepokoski, "Fiery-Pulsed Libertine": 135.

⁵⁸ Paul Wingfield, "Beyond 'Norms and Deformations': Towards a Theory of Sonata Form as Reception History," *Music Analysis* 27, no. 1 (2008): 137–177.

development section and that a reader's acceptance of the rotational principle requires jettisoning well-established recapitulatory concepts (mirror, reversed, and partially reversed recapitulations).⁵⁹ He also notes *Elements of Sonata Theory*'s "defensive" stance regarding rotations and suggests "periodicity" as a "more accurate scientific metaphor" because periodicity can "undergo permutation."⁶⁰ More importantly, adhering to a rotational view of some pieces, such as the first movement of Mozart's Piano Sonata in D-major, K. 311 (1777), might produce "convoluted" and "counter-intuitive" analyses.⁶¹ Wingfield also locates problems with the idea of deformations and dialogic form, in that the manifold contemporaneous accounts of sonata form in the nineteenth century were not compatible so that "it is not possible to identify a composite nineteenth-century model that can be used as a point of dialogic reference," and that "post-Beethovenian repertoire very rapidly becomes resistant to analysis in terms of Sonata Theory's 'generic norms."⁶² Overall, even though Hepokoski and Darcy present generic form as an "ahistorical" heuristic tool, Wingfield believes that reconciling the ideas of a generic sonata and dialogic form leads to the "insupportable conclusion that eighteenth- and nineteenth-century composers are entering into a dialogue with 'generic norms' devised as heuristic tools in the late twentieth century."⁶³ Wingfield thus summarizes a variety of criticisms of Sonata Theory, including the problems of rotations and deformations and (a)historical application.

Hepokoski's work on deformations and rotations as discussed above, however, is only one avenue for approaching twentieth-century symphonic repertoire. Steven Vande

⁵⁹ Wingfield, "Beyond 'Norms and Deformations": 149.

⁶⁰ Wingfield, "Beyond 'Norms and Deformations": 150.

⁶¹ Wingfield, "Beyond 'Norms and Deformations": 151.

⁶² Wingfield, "Beyond 'Norms and Deformations": 154.

⁶³ Wingfield, "Beyond 'Norms and Deformations": 154-155.

Moortele's "two-dimensional sonata form" provides another example of an analytical method created for his repertoire of interest. His interest lies in one-movement works that include elements of sonata form and a multi-movement sonata cycle, both of which occur at the same hierarchical level.⁶⁴He analyzes Liszt's B-minor Piano Sonata (1853) as the first true two-dimensional sonata form. It includes an introduction (mm. 1-7), exposition (mm. 8-204), development (mm. 205-330), interpolated slow movement (mm. 331-425), recapitulation (where the scherzo (mm. 460-532) ==> the finale (mm. 533-672)), and coda (mm. 673-760). Two-dimensional sonata forms present a solution to the post-Beethovenian problem of sonata form and cycle.⁶⁵ Thus, these single-movement forms are best not considered deformations of the normative eighteenth- and nineteenth-century sonata form, but rather their own "autonomous type of formal organization."⁶⁶

Vande Moortele's work is intriguing for this dissertation because he creates a method that describes the construction of his repertoire of interest. By doing so, he avoids falling into the "deformation trap" (scare quotes) and does not merely explain away the structural intricacies of two-dimensional sonata form. It is perhaps easier for Vande Moortele to see and avoid this problem in his work, as two-dimensional sonata forms have a more marked contrast with the generic sonata-form model of the Classical era. However, this standard should be applied to all twentieth-century repertoire, and not just that which blurs sonata form and sonata cycle.

⁶⁴ Steven Vande Moortele, *Two-Dimensional Sonata Form: Form and Cycle in Single-Movement Instrumental Works by Liszt, Strauss, Schoenberg, and Zemlinsky* (Leuven: Leuven University Press, 2009), 14.

⁶⁵ Vande Moortele, *Two-Dimensional Sonata Form*, 6.

⁶⁶ Vande Moortele, *Two-Dimensional Sonata Form*, 5.

Methodology

This dissertation uses primarily analysis and comparison of case studies to understand the construction of sonata form in the late twentieth century. I first analyze mid-century neoclassical symphonies to understand how sonata form works in the twentieth century. These symphonies, based on traditional sonata form, will largely retain two- or three-part expositional, developmental, and recapitulatory structures that include P, TR, and S zones. The clarity of these sections and zones allows me to identify secondary parameters that define each of these entities. How does one know when one hears P, TR, or S, or an exposition, a development, or a recapitulation?

A significant number of secondary parameters change at formal junctures, such as where a movement moves from P zone to TR, TR to S zone, from exposition to development, and from development to recapitulation. After defining what these secondary parameters are and how they work, I will then use my findings as a springboard for their application to late twentieth-century symphonic repertoire. Essentially, the same qualities (those that can be used to identify the P, TR, and S zones and expositions and recapitulations) apply to both mid-century neoclassical and late-century repertoires: secondary parameters, including character, texture, tempo, and orchestration, define the form. These sonatas also use similar developmental techniques to their tonal (and earlier-twentieth-century) counterparts.

This investigation relies on terminology from Sonata Theory to capture late twentiethcentury symphonic repertoire's inheritance from earlier versions of the genre. Briefly put, P, TR, and S stand for the primary, transition, and secondary zones, respectively; the exposition includes essential expositional closure (EEC) and the recapitulation, its analogue, the essential sonata closure (ESC); and the medial caesura (MC) follows the transition.⁶⁷ The TR is particularly marked by energy-gain through faster rhythms and/or tempo, louder dynamics,

⁶⁷ Hepokoski and Darcy, *Elements of Sonata Theory*, 16-20.

increased instrumentation, and more dense contrapuntal texture; and a general pause ("GP") often follows the MC, but "caesura-fill" can occur in its stead.⁶⁸ Applying these terms to late twentieth-century repertoire is not a contradiction because these formal zones still exist; they simply live under different terms in this body of repertoire.

I rely on Caplin's interthematic formal functions, which concern a sonata exposition's main theme, transition, and subordinate theme (or the P zone, TR, and S zone, to be consistent with this dissertation's terminology).⁶⁹ The P zone, TR, S zone, expositions, developments, and recapitulations in the late-twentieth-century continue to embody fundamental markers of formal functions appropriate for their locations—primarily "tight-knit" and "loose-knit" qualities, even without employing functional tonality.⁷⁰ Caplin uses tonal parameters to define these entities, but I will summarize here only what is relevant for this investigation.

Scholars (most notably Anabel Maler) have began to explore how post-tonal repertoire embodies formal functions and this scholarship does relate to music examined in the current project.⁷¹ It is outside the scope of this dissertation to examine formal functions in great detail, but, after the secondary-parameter network's identification of each formal function, Caplin's criteria of tight-knit and loose features still generally apply: initiating interthematic functions tend to be more "tight-knit" than mediating and concluding functions (which are, conversely, "loose-knit").⁷² Tight-knit and loose features still present a continuum

⁶⁸ Hepokoski and Darcy, *Elements of Sonata Theory*, 18, 34.

⁶⁹ Caplin, *Classical Form*, 17-21. A quick way to distinguish between interthematic and intrathematic formal functions is to consider the relationship between the Internet and an intranet: the Internet connects many computers, in a variety of places, together, but a company's intranet connects only the computers at the company's location.

⁷⁰ Caplin, *Classical Form*, 17.

⁷¹ Maler, "Hearing Form in Post-Tonal Music,"; Maler, "Listening to Phrase Structure and Formal Function."

⁷² Caplin, *Classical Form*, 17.

of possibilities for late-twentieth-century repertoire, and, within the pieces studied in the present project, P zones tend to be more tight-knit than their subsequent transitions and S zones. Even if "harmonic-tonal stability" is not a requisite feature of late-twentieth-century music, tight-knit themes are more likely to have "cadential confirmation, unity of melodic-motivic material, efficiency of formal function, and symmetrical phrase groupings" than their later counterparts.⁷³ A formal function can have harmonic-tonal stability through centricity on a given pitch as demonstrated at a moment of form-functional closure; in late-twentieth-century repertoire, closural processes occur where cadences do in (functionally) tonal repertoire and will be discussed in greater detail below. Tighter-knit phrase structures tend to use the same melodic motive repeatedly, which can also lead to compacter, more efficient expression of intrathematic formal functions. In turn, efficient (or nearly efficient) formal functions lead to more closely symmetrical phrase groupings.

Conversely, looser themes tend to be more melodically diverse and include asymmetrical phrase structures, which tend to be longer in length due to avoided moments of closure.⁷⁴ These formal functions often use more motives than their tight-knit counterparts, which can lead to asymmetrical phrase structures and longer length. Closural avoidance can also lead to longer length, though such evasion can be nebulous to identify without clear musical processes that indicate the imminence of a moment of closure. Thus, even when harmonic or tonal stability is not a required factor, Caplin's other features of tighter-knit and looser themes still manifest in late-twentieth-century repertoire.

Like its earlier counterparts, the late-twentieth-century transition (TR) is very often marked by energy-gain that builds momentum and increases "forward drive" even if it does

⁷³ Caplin, *Classical Form*, 17.

⁷⁴ Caplin, *Classical Form*, 17.

not display any modulatory function.⁷⁵ Transitions often embody the qualities of looseness just discussed, and energy-gain occurs through secondary parameters: they tend to deploy faster rhythms and/or tempo, greater instrumentation, louder dynamics, and a more complex contrapuntal texture than their preceding P zones. In this way, transitions in the late twentieth century perform similar roles as those in previous centuries.

In a similar way to the intrathematic formal functions, the three main sections of sonata form in late-twentieth-century repertoire also demonstrate consistencies with their earlier counterparts. Expositions retain the three intrathematic formal functions. Developments demonstrate increased instability and looser organization through their use of sequential processes and avoidance of closure. Finally, recapitulations include a return of expositional material. Because sections behave consistently to previous definitions, I retain the terms "exposition," "development," and "recapitulation."

The formal functional consistency in late-twentieth-century symphonic repertoire with its functionally tonal counterparts allows me to import the relevant vocabulary as needed. Even though movements written in the late twentieth century do not need to adhere to functionally tonal structures, they retain many other qualities of various formal functions identified by Caplin. Thus, the vocabulary developed around sonata form by Caplin and Hepokoski and Darcy is still relevant to this body of music. This project engages with Hepokoski and Darcy's idea of "dialogic form" to the extent that each part of a late-twentieth-century sonata-form movement continues to demonstrate the form, albeit without the requirement of functional tonality.⁷⁶ While scholars can discuss mid-century neoclassical sonata forms in terms of pitch center, the composers in the later twentieth century— studied in this dissertation—moved even further away from Harrison's common-practice downtown.

⁷⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 93; Caplin, *Classical Form*, 125.

⁷⁶ Hepokoski and Darcy, *Elements of Sonata Theory*, 10.

Pitch and harmony, once the fundamental defining factors for sonata form, grew increasingly tenuous as defining musical parameters.

In response, the secondary-parameter network prioritizes non-pitch parameters as primary analytical factors. The secondary-parameter network identifies changes in formal function through the adjustments of secondary parameters. Rather than create new terms that might obscure structural, dialogical relationships between late-twentieth-century repertoire and the historical trope of sonata form, I rely on the existing vocabulary, with the caveat that different types of tonality or centricity might be present.

This project has several significant changes in orientation from Caplin's original perspective. First, it is worth emphasis that this project is less concerned with how secondary parameters change within each intrathematic level (i.e., to define the beginning, mediating, and ending formal functions), even though minute but deliberate secondary-parameter changes can sometimes occur within a given interthematic formal function. It is possible, for example, that a zone's dynamic level fluctuates significantly, or that its rhythms include the whole spectrum of long and short notes (whole notes and sixteenth notes, respectively). The secondary-parameter network captures the overall effect of these motions: the fact that these secondary parameters change contribute to their overall intrathematic formal function. However, it is difficult to make general assessments regarding secondary-parameter changes across or within formal functions, as there are few consistencies between P, TR, or S zones (other than TR's penchant for energy-gain, discussed below), or within each of these interthematic functions. Likewise, and second, I am less concerned about how lower-level groups aggregate to create themes and larger formal structures; instead, I focus on interthematic and sectional relationships. In short, my application of the secondary-parameter network in this project prioritizes interthematic formal functions, and eschews consideration of lower-level grouping structures.

For this project, I first build a formal account of the twentieth-century neoclassical sonata by analyzing first movements of symphonies by Hindemith, Martinů, Persichetti, Piston, Prokofiev, Shostakovich, and Stravinsky. Table 1 shows these composers in chronological order, and Table 2 summarizes the secondary parameters that may change at any formal junction-presenting, as it were, a blank template for analysis with the secondaryparameter network. This allows me to understand what techniques these composers use to differentiate various zones and sections of sonata form. The expositional P and S zones tend to be distinguished by contrasting qualities, including character, rhythms, instrumentation, tempo, and texture; each possesses its own set of stable secondary parameters, but P and S's respective tight- and loose-knit features help characterize these different zones. Transitions are often marked by energy-gain due to faster tempo and rhythms or increased contrapuntal complexity, and can end with a medial caesura. While the secondary-parameter network does not identify explicit themes or melodies as such (and instead focuses on the overall contrapuntal texture), the presence of these themes is still vital to the secondary-parameter network's analysis. When a theme occurs, the secondary-parameter network uses its particular rhythms, instrumentation, tempo, etc., for identification. Developments extract and develop expositional motives through techniques such as fragmentation, sequencing, and faster alternations between instrument groups. There are few, if any, stated melodies in these sections of neo-classical sonata forms because their function is to develop.

Shostakovich, Symphony No. 1 (1924-1925), i and iv
Prokofiev, Symphony No. 3 (1928)
Shostakovich, Symphony No. 5 (1937), i and iv
Stravinsky, Symphony in C (1938-1940)
Hindemith, Symphony in Eb (1940)
Shostakovich, Symphony No. 7 (1941)
Martinů, Symphony No. 1 (1942)
Martinů, Symphony No. 3 (1944)
Stravinsky, Symphony in Three Movements (1942-1945)
Hindemith, Symphonia Serena (1946)
Prokofiev, Symphony No. 6 (1947)
Prokofiev, Symphony No. 7 (1952)
Persichetti, Symphony for Band, S6 (1956)
Persichetti, Symphony No. 8 (1967)

Table 1. Neoclassical pieces surveyed for this study, listed in chronological order.

Exposition P	-instrumentation -tempo -time signature -rhythms -texture -dynamic
TR	 -energy-gain (faster tempo and/or rhythms) -instrumentation -tempo -time signature -rhythms -texture -dynamic -medial caesura optional (long notes, grand pause)
S	-instrumentation -tempo -new time/key signature -rhythms -texture -dynamic
Development	-expositional motives -minor mode -fragmentation -repetition -sequencing -layering -faster alternations between instrument groups
Recapitulation	-return (or allusion) of something

Table 2. A summary of secondary parameters that help excavate sonata form in the twentieth century.

Finally, recapitulations are marked by the return of (or allusion to) something from the exposition, but not necessarily a literal return of the whole exposition or even any constituent zone. Composers may choose to recapitulate large swaths of their expositions, but this need not be the case—a composer might choose to include only one zone, or even its fragments, in a recapitulation. (Nonliteral recapitulations can cause consequences for recapitulatory interthematic formal functions and will be explored in greater detail in Chapter 2.)

Second, I search for these same markers of sonata form in late twentieth-century repertoire. As the ensuing discussions will show, late-twentieth-century sonata-form movements feature clear expositions, developments, and recapitulations, and they often include P, TR, and S areas. In other words, these movements demonstrate a generic sonataform layout. There are a variety of qualities that are generally shared by twentieth-century sonatas: P and S zones are homophonic textures or otherwise easily distinguishable from their accompaniment; transitions demonstrate energy-gain, while using a different configuration of secondary parameters; and recapitulations include material from the exposition. This repertoire often includes clear-cut themes for most, if not all, interthematic formal functions, which enables me to draw out secondary parameters from a clear sonata-form structure. After building the secondary-parameter network via Dora Hanninen's theory of analysis, I will enumerate analytical steps for the secondary-parameter network before applying it to the first movements of Martinû's First Symphony (1942) and Persichetti's Symphony for Band (1956).

The premise of this methodology is that each section has its own identifying group of secondary parameters. Secondary-parameter changes may include new rhythms, instrumentation, tempo, texture, time signature, and dynamics. Though secondary parameters may change within each interthematic formal function, each formal function is defined by its aggregate of secondary parameters. For example, a specific set of rhythms, dynamic levels,

instrumentation, tempo, texture, and time signature occur throughout the P zone; and then all or most of these change at the onset of the TR, so that, while tempo and time signature may remain consistent, new rhythms, dynamic level, instrumentation, and texture are now present. All individual secondary parameters are united through their combined effort to define each formal function—hence the label "network" for this method. (I do not use the term "network" in the transformational sense.) Though each interthematic formal function has its own beginning, mediating, and ending function, the secondary-parameter network is less concerned with what constitutes each of these parts. Rather, it focuses on what secondary parameters are present to define each interthematic function; the identification of tight-knit and loose features and moments of closure (discussed below) are icing on top of the secondary-parameter network cake, so to speak.

Dora Hanninen's methodology offer some helpful vocabulary regarding the underpinnings of the secondary-parameter network. This clarification is important because and it helps describe how the secondary-parameter network interacts with a melody. Hanninen defines three domains: the "sonic domain," which includes "individual notes and their attribute values in various sonic dimensions"; the "contextual domain" that examines "associations between segments and identification of the many contexts that impinge on musical objects to shape their sound in a particular way"; and the "structural domain" of an "active reference to a theory of musical structure or syntax."⁷⁷ Hanninen's sonic, contextual, and structural domains correspond to the secondary parameters, interthematic formal function, and the secondary-parameter network, respectively.

"Orientation" is "a mode of attending to or conceptualizing music."⁷⁸ A "disjunctive orientation" uses "differences in the attribute-values of individual events" to "locate

⁷⁷ Dora Hanninen, *A Theory of Music Analysis: On Segmentation and Associative Sets* (Rochester: University of Rochester Press, 2012): 5-7.

⁷⁸ Hanninen, A Theory of Music Analysis, 9.

boundaries"; the secondary-parameter network reflects this through its use of changes of secondary parameters to define formal boundaries.⁷⁹ Its "associative orientation" (which "focuses on relational properties that connect groupings of notes with one another") locates each network of secondary parameters within a sonata-form structure.⁸⁰

At its most fundamental level, the secondary-parameter network uses criterion to define each formal function. Hanninen defines "criterion" as "a rational for musical segmentation."⁸¹ The secondary-parameter network uses each secondary parameter (instrumentation, rhythm, tempo, texture, dynamics, and time signature) as its criteria, and there are three relationships between criterion and notes.⁸² "Instantiation" embodies "a one-to-one mapping"; "coincidence" portrays "a many-to-one mapping from the instantiation of at least two criteria"; and "realization" happens when "a special case of coincidence" that involves both structural and sonic or contextual criteria.⁸³ The secondary-parameter network operates mostly in the coincidence level, with multiple secondary parameters mapping onto a given group of notes that constitute a formal function. The secondary-parameter network thus defines each "segment" ("a group of notes (or other musical events) that constitutes a significant object in an analytical discourse") based on the "supporting criteria" of secondary parameters.⁸⁴

This point is worth emphasis, as it is true for any musical excerpt, regardless of which secondary parameters are at play at any time, and what form they take. The secondary-

⁷⁹ Hanninen, A Theory of Music Analysis, 9-10.

⁸⁰ Hanninen, A Theory of Music Analysis, 10.

⁸¹ Hanninen, *A Theory of Music Analysis*, 10. Criterion relationships can occur at the sonic, contextual, and structural levels (10).

⁸² Hanninen, A Theory of Music Analysis, 10.

⁸³ Hanninen, A Theory of Music Analysis, 10-11.

⁸⁴ Hanninen, A Theory of Music Analysis, 11.

parameter network views any formal function (which might be otherwise identified as a theme or melody) as its conglomerate of secondary parameters. In Hanninen's words, this analytical method defines each segment through its unique combination of criteria of secondary parameters. Furthermore, in the repertoire studied for this project, significant and sudden changes to secondary parameters always define a new segment—though there are exceptions, formal junctions do not tend to be subtle. Segments in different sections of a sonata-form movement might have different lengths—that is, interthematic formal functions are often longer than instances of fragmentation in a development—but the process of identifying segments remains consistent.

Because it deals with six secondary parameters for its criteria, the secondaryparameter network defines "phenosegments" ("readily perceptible musical unit[s] (...) which can involve any number or combination of sonic or contextual criteria") rather than "genosegments," which require "*exactly one* sonic or contextual criterion."⁸⁵ The secondaryparameter network creates an "associative set" of all phenosegments by placing them into relationship via their "contextual criteria."⁸⁶ This is true for its analyses of both expositions and developments. However, only analyses of expositions create "associative landscapes" that "consider associative sets *in* their temporal context" because these invoke tight-knit and loose relationships.⁸⁷

Analysis with the secondary-parameter network operates as follows:

At the beginning of a movement, it is possible that either P or an introduction occur.
 Both formal functions will be defined as a conglomerate of secondary parameters—
instrumentation, tempo, time signature, rhythms, texture, and dynamic all work

⁸⁵ Hanninen, A Theory of Music Analysis, 12. Emphasis in the original.

⁸⁶ Hanninen, A Theory of Music Analysis, 12.

⁸⁷ Hanninen, A Theory of Music Analysis, 12.

together to form the P zone or introduction. Even though "theme" or "melody" are not considered as secondary parameters, the P zone is more likely to have include a homophonic texture. P also includes elements of tight-knit structure, such as its orientation towards closure, unified motives, and tendency for more clear-cut formal functions. It is very important to hear P as the constituent of all these secondary parameters because recapitulations do not always include all secondary parameters from an exposition.

It is likely that an introduction occurs when no melodic line is present, and it can exist on either small- or large-scale levels. An introduction is more likely to have a chorale or monophonic texture, more repetitive rhythms, slower harmonic rhythm, and more consistent instrumentation than an ensuing interthematic formal function. Caplin's differentiation between thematic and slow introductions applies to twentieth-century repertoire: a thematic introduction "resides on a hierarchical level comparable to that of a basic idea, contrasting idea, cadential idea, and codetta, while a slow introduction performs "before-the-beginning" function and "resides on a level comparable to that of an exposition, development, recapitulation, and coda."⁸⁸ In other words, a thematic introduction prefixes a theme and a slow introduction is more independent. One distinction must be made, though: an introduction with before-the-beginning function in twentieth-century repertoire does not need to have a slow tempo; following Vande Moortele, I call these "in-tempo introductions."⁸⁹ The (in)consistency of secondary parameters between the introduction will have more (or

⁸⁸ Caplin, Classical Form, 203-205.

⁸⁹ Steven Vande Moortele, *The Romantic Overture and Musical Form from Rossini to Wagner* (Cambridge: Cambridge University Press), 128.

totally) consistent secondary parameters, while the secondary parameters between an in-tempo introduction and the following zone are less uniform. On the one hand, a thematic introduction incorporates P's agglomeration of secondary parameters that she hears. On the other hand, a significant shift of secondary parameters occurs between the in-tempo introduction and the P zone. In these ways, both types of introduction are recognized retrospectively. Chapters 2 and 6 discuss the secondaryparameter network and thematic and in-tempo introductions, respectively.

One final possibility exists at this juncture: it is also possible that the P zone does not have a homophonic texture. In this case, the P zone retains enough length to establish its secondary parameters before it is succeeded by the TR. Regardless of contrapuntal texture, the secondary-parameter network always focuses on defining P based on its secondary parameters. The changes of secondary parameters at the TR's commencement also corroborate P's identity.

2. Assume that P continues until there is a simultaneous change of multiple secondary parameters, at which TR begins; a TR is always present in some form. There are two elements relative to this judgment: the number of secondary parameters that change, and the duration that they take to change. The more secondary parameters that change and the shorter duration are more likely to constitute a change of interthematic formal function. It is possible for secondary parameters to change in each interthematic formal function—for example, adding more instruments, quickening rhythms, and including a new dynamic might all occur within the same zone, but, unless all these secondary-parameter changes occur at the same time, they will not yield a new interthematic formal function. If several instruments, a crescendo, and an accelerando to a new tempo are added over five measures, for example, the ensuing section might lead to the P zone's climax or to some internal contrast (if P is a small ternary form).

Of course, it is possible for P=>TR to occur or for P and TR to overlap as permeable boundaries. In both cases, however, the change of secondary parameters would completely shift after some point in time to delineate the new interthematic formal function. A specific melody or motive may be present in the TR, but the TR is ultimately defined through its concomitant secondary parameters.

- 3. After the TR, secondary parameters will change again and the form will proceed to either MC-fill or S zone. MC-fill often has post-cadential function—slower harmonic rhythms or literal rhythms, a simpler texture (chorale or homophonic textures) are most common—while the S zone can have any configuration of secondary parameters that is new from that heard previously. Regardless as to which formal function occurs next, enough secondary parameters change in a sufficiently short amount of time that they sound like a new section. Again, the S zone consists of the secondary parameters that accumulate to make the whole and, if S returns in the recapitulation, not all of its secondary parameters may be present. The S zone concludes with a moment of closure that acts as the essential expositional closure (EEC), where a significant number of secondary parameters change in a short amount of time.
- 4. There may be a brief closing zone after S. If there is, a significant number of secondary parameters will change after S's conclusion; some (such as instrumentation or dynamic) might carry over into the closing zone, but most secondary parameters will adjust within a short span of time. Usually, S concludes with a clear moment of closure that can be identified as the EEC, so the closing zone's start can be found intuitively. The closing zone is marked by post-cadential function, as is MC-fill, and its secondary parameters may adjust to include slower tempo, quieter dynamics, slower harmonic or surface rhythms, and a thinner or simpler texture.

- 5. The development often begins with a change of secondary parameters (new tempo, time signature, instrumentation, or dynamic level) and includes more frequent changes of secondary parameter due to reliance on developmental techniques. Common developmental techniques include fragmentation, layering, repetition, and faster alternation between instrument groups. Fragmentation and faster alternation between instrument groups, for example, lend themselves well to frequent changes in instrumentation, while layering can present new instrumental combinations and contrapuntal textures. Frequent changes of secondary parameters tend to occur in a development section with its concomitant techniques, so that this is a defining feature of late-twentieth-century developments. A sonata form's exposition, even in the late twentieth century, will present cohesive groups of secondary parameters, and their lack of consistency is a sure sign that the development section is underway. Chapters 4 and 5 examine the secondary-parameter network and developments.
- 6. The recapitulation occurs with a significant change of secondary parameters, but it also fosters the return of a familiar set of secondary parameters—something from the exposition—that does not occur in a developmental setting. Essential sonata closure (ESC) occurs when a significant number of secondary parameters change in a short amount of time. A closing zone may be included in the recapitulation.
- 7. A coda may occur. Like other moments with after-the-end function, a coda may include slower harmonic or literal rhythms, a slower tempo, quieter dynamic, sparser instrumentation, and simpler texture. Chapter 2 examines two examples of recapitulation/coda relationships.

Completing analysis with the secondary-parameter network does not guarantee that a movement will be in sonata form—that is, the secondary-parameter network can identify

many different formal structures. In other words, the secondary-parameter network can be applied to any late-twentieth-century movement regardless of the movement's individual relationship with sonata form (including when there is no relationship). How does the analyst know that a sonata form is at hand? This question gets at what it means, so to speak, for a movement to be a sonata. For historical sonata forms, there were two particular sections that marked sonata-form-ness: the development and the recapitulation. Twentieth-century sonataform movements often retain both functions, even if their joint presence is not necessary for their sonata-form-ness.

First, while changes of key are vital to pre-late-twentieth-century sonata-form movements, many formal structures include changes of key or modality, including binary forms and minuet and trio forms. Among various forms, one defining feature of sonata form is that the two key areas have the unique opportunity to directly work out which key is more important in the development section. Of the repertoire studied for this dissertation, all twentieth-century sonata-form movements included the development section, even if pitch works differently so that key areas did not need to work themselves out in this section. Even without this tonal inheritance, the developmental techniques present the instability traditionally found in the middle section of a sonata-form movement. While all these composers had the viable option to write a sonata-form movement with only exposition and recapitulation, the persistence of the development suggests that it became a trope or historical marker to further distinguish a movement's integration in the sonata genre.

Second, even if a historical sonata-form movement did not include a development section (Hepokoski and Darcy's Type 1 sonata), its recapitulation still included expositional materials in the global key—that is, unless it was an unusual case, the movement would begin and end in the same key. A recapitulation's adherence to the movement's main key area was a second defining factor for a movement's sonata-form-ness. In the late-twentieth-century,

though, tonality's different workings and increasing variety allows recapitulations to operate differently. Instead of modulating the S zone's materials to a global key, late-twentiethcentury recapitulations require the return of at least one expositional formal function; many of the movements presented as case studies recapitulate only P-zone materials, and use the same pitches as in the exposition. Not all interthematic formal functions from the exposition need to be present in the recapitulation because there is no globally defining key/pitch center that requires tonal transformation of at least one of the interthematic formal functions. In other words, if an exposition does not commit to a particular key area or pitch collection, there is no collection to which the movement can return at the recapitulation.

Additionally, the fact that there is no clear opening collection for the P zone renders it more difficult to establish a contrasting key for the S zone. A lack of such definition in the P zone also has implications for the end of the movement, in that it is more challenging to argue that a specific key close out the movement. Even if triads are occasionally present in some movements, composers generally do not assign a specific key to their works so that they downplay nuances in tonal structure between interthematic formal functions: the symphonies studied in this dissertation are entitled "Symphony No. X," not "Symphony No. X in Amajor." Each interthematic formal function can embody its own key area without reference to an overarching pitch-based narrative. Because functional tonality has already broken down, late-twentieth-century composers are not tied to specific relationships between sets of notes for any interthematic formal function, in any sonata-form section.

Instead, P and S are distinguished by their respective locations within an exposition and their respective (and relative) tight-knit and loose features. On the one hand, the P zone occurs at (or towards) the exposition's beginning and tends to include markers of tight-knit structure, such as motivic unity, symmetry, and effective closure. On the other hand, the S zone occurs towards the end of the exposition, after the transition, and tends towards melodic

diversity, asymmetrical phrase structures, and avoids or rejects potential moments of closure. In sum, the relative locations of the P zone and S zone, along with their locations on the tightknit/loose continuum, reliably distinguish them.

If the movements studied in this dissertation were examined solely from a pitch-based standpoint, the results are, in some cases, drastically different and incorrect, to my ear. In the late twentieth century, the return of a specific set of pitches no longer has the power to define the recapitulation, even though this does happen. The secondary-parameter network allows for more flexibility through its foregrounding of and reliance on secondary parameters to define each interthematic formal function. By focusing on musical elements other than pitch, the secondary-parameter network allows sonata-form movements to execute any pitch-based trajectory that a composer might decide. The notes that constitute any interthematic formal function are less vital, from an analytical standpoint, than the musical parameters examined by the secondary-parameter network, because of the unravelling of functional tonality.

This said, my analyses with the secondary-parameter network invoke pitch in two articular contexts: when discussing repetition (literal or sequential) in development sections, and when identifying closure. The secondary-parameter network does not incorporate pitch for primary analytical consideration, but that does not mean that pitch does not play a role in musical processes. I occasionally invoke it as an extra parameter to support my analyses with the secondary-parameter network, but the methodological mechanisms of motives and tropes that are discussed below allow for my analyses with the secondary-parameter network to invoke pitch in a few highly specific ways.

While this project focuses on secondary parameters as primary analytical targets, it is important to recognize that composers might focus more on pitch-related elements than on tempo, instrumentation, texture, etc., even though all these parameters constitute a musical structure. In other words, composers may not think in terms of secondary parameters as they

compose, but this does not mean that secondary parameters cannot offer fruitful analytical information. Instead, by acknowledging that interthematic formal functions consist of both secondary parameters and pitch, the secondary-parameter network can rely upon its methodology for analysis and invoke implications of compositional motives and tropes when necessary. From Caplin's definition, interthematic formal functions include some amount of closure, so that there is a relationship between these two entities. Incorporating motive and trope, as pitch-based elements, creates a relationship between secondary parameters and closure, in addition to offering assistance in discussing developmental techniques. The result is that a triangular relationship between interthematic formal function, secondary parameters, and closure emerges within any composer's compositional style. To put it metaphorically, motives and tropes circulate freely between all of these entities. Figure 3 offers a diagram of how these all relate. Formal functions, secondary parameters, and closure are all discussed elsewhere in this dissertation, so the present focus is on the ideas of motive and trope and how they can invoke pitch in some select ways.



Figure 3. The relationship between compositional style, secondary parameters, and closure.

For the purpose of this project, I take motives to be piece-specific compositional incipits that a composer incorporates with throughout a movement. While it is possible that a composer might incorporate the same motive(s) into multiple works, the repertoire restrictions established for this dissertation more or less prevented such option. Motives are the essence of what connect interthematic function with secondary parameters: in writing phrases based on them, composers give motives definition through instrumentation, rhythms, time signature, etc., that allows the secondary-parameter network to complete its work. The invocation of motives, though, incorporates pitch into discussion only as much as necessary. In this project, this means that pitch is discussed to assist with the identification of sequencing in development sections. The pitched aspects of motives detect when pitch changes occur to distinguish sequencing from (pitch-consistent) repetition. Motives, in other words, are the entities that are made up of pitches, which the secondary-parameter network refrains from acknowledging, so their incorporation is necessary for the discussion of developmental techniques.

I define tropes as the generic qualities that tend to occur at moments of closure—that is, the stepwise melodic motion and movement from a dissonant to a consonant harmony. Tropes specifically connect secondary parameters and closure. The secondary-parameter network observes the rests and instrument changes that are present at moments of closure, but, on its own, it does not take melodic or harmonic motion into account. Involving tropes as objects that relate to pitch—solves this problem. In other words, tropes help the secondaryparameter network identify where stepwise melodic motion occurs alongside motion from dissonance to consonance, after or as the secondary-parameter network recognizes a formal juncture through changes of secondary parameters. In this light, tropes can be thought of as long-standing motives that many composers incorporate into their works at moments of closure—whether consciously or unconsciously, or as part of a specific compositional style or not. The pitched aspects of tropes label musical objects of convergence at moments of closure.

I want to conclude this discussion by making explicit what my invocations of pitch do and not do. Incorporating motives and tropes is vital to the secondary-parameter network's

analyses because it allows me to invoke pitch in very specific ways. My analytical focus remains on secondary parameters, and I can incorporate discussion of pitch as necessary.

First, the analyses in this dissertation do not label all harmonies, such as occurs in a Roman numeral or set theory analysis. Second, my analyses do not assign one pitch as having greater importance, even though other scholars' identification of closure often focuses on centricity of some sort. Instead, the more significant aspects of analyses with the secondaryparameter network are how interthematic formal functions achieve closure and that they do that is, I do not seek to compare how pitch-based trajectories fit into a single scheme across a whole movement. Finally, analyses with the secondary-parameter network does not ascribe or require any sort of motion from one pitch or harmony to another, aside from the closural tropes of stepwise motion and movement from discordant to concordant harmonies.

The following analysis of the first movements of Martinů's First Symphony and Persichetti's Symphony for Band demonstrate the secondary-parameter network's application to sonata-form movements. Both of these movements' forms can be parsed through analysis of secondary parameters, even though both movements present many homophonic textures with discernable key areas on which other analytical approaches might rely. Definitive melodies and clear pitch collections are particularly helpful because a recapitulation can omit large swaths from the exposition, or when several components of the exposition are based on the same motive—instances that might otherwise obscure form and formal function. Even though the key areas are often quite clear, none reflect functional tonality.

Table 3 summarizes the sonata-form structure of Martinu's First Symphony via the secondary-parameter network and includes some information about key area to corroborate the secondary-parameter network's findings. While there is not a one-to-one relationship between formal function and key area, new collections coincide with changes to secondary

parameters more often than not, so that the key areas support the secondary-parameter network's findings.

Slow Intro: mm. 1-10	 -instrumentation: strings; winds; horns -tempo: Moderato, dotted quarter note = 54 -time signature: 6/8 -rhythms: long notes; ascending sixteenth-note runs -texture: contrapuntal -dynamic: <i>mezzo-piano; crescendo</i> to <i>mezzo-forte</i> (B-major)
Exposition	
P: mm. 11-32	 -instrumentation: violins -tempo: <i>Poco più mosso</i> -time signature: 6/8 -rhythms: quarter- and eighth-notes -texture: contrapuntal (low, middle, and high strings); flute and clarinet flourishes -dynamic: <i>forte</i> (E-minor, C-major)
TR: mm. 33-40	 -energy-gain: ascending scales, trills, and thicker instrumentation -instrumentation: winds, brass, and strings -tempo: (same) -time signature: 6/8 -rhythms: vary from dotted half notes to thirty-second note triplets -texture: more dense -dynamic: <i>forte</i> -MC: m. 39 (G-major)
S: mm. 40-87	 -instrumentation: woodwinds -tempo: <i>Tranquillo</i> -time signature: 6/8 -rhythms: quarter and eighth notes -texture: homophonic (slower harmonic rhythm than TR); violin and harp oscillations -dynamic: <i>piano</i> (G-major, G-minor, A-major, ends C-major)
Development: mm. 88- 249	-energy-gain -faster alternation between instrument groups (mm. 102-106; 115-116) -shorter fragmentation (mm. 102-106; 115-116; 227-229)

Recapitulation: mm. 250-279	-P (TR and S references) (Bb-major, B minor)
Coda: mm. 280-298	

Table 3. Summary of sonata-defining parameters in the first movement of Martinů's First Symphony.

Example 1a shows that Martinů's P zone uses a homophonic texture with an E-minor key (excluding the flutes' and clarinets' chromatic noodling). A violin melody resides above the complex accompaniment, and it can be distinguished through instrumentation (the violins are a typical location for a melody to reside), register (it is significantly higher than the other voices), and contour (while other lines oscillate between two notes or primarily ascend, the melody moves both down and up). This P zone demonstrates tight-knit features primarily through regular changes to harmonic rhythms—Martinů's stylistic use of repetitions tends to obscure phrase concision and cadences.



Example 1a. Bohuslav Martinů, Symphony No. 1, I, mm. 11-12: The P zone demonstrates its own instrumentation, register, and contour.

Example 1b shows how, when the music shifts to the TR, the texture becomes increasingly dense and contrapuntal, which fosters energy-gain through faster rhythms and ascending scales. While the medial caesura (MC) occurs on a G-major triad (not shown), the TR first obscures tonal collection through its early avoidance of any triad. The TR's abruptness makes up for its brevity (8 mm. in length, including its MC fill). The harp's sudden glissando, along with the prominence of faster rhythms and scales, allows for a high level of energy-gain in a short amount of time. Example 1c demonstrates how the S zone is again separated by register from other voices, and has more variation in contour than the other voices. It affirms the G-major MC that previously occurred. The accompanimental voices either oscillate (violins and low strings) or are static to create a homophonic texture with the melody. S's loose-knit features include tonal instability (it moves through G-major, G-minor, and A-major to end in C-major), consistent hemiola, less definition of harmonic rhythms, and longer length that results from increased repetition.



Example 1b. Bohuslav Martinů, Symphony No. 1, I, mm. 33-35: TR demonstrates energy-gain through a denser contrapuntal texture, faster rhythms, and ascending scales.



Example 1c. Bohuslav Martinů, Symphony No. 1, I, mm. 41-42: S demonstrates homophonic texture, where the melody has a higher register and more variation in contour than the oscillating accompaniment.

Examples 2a-c show three examples from Martinu's development. Examples 2a and 2b include faster alternation between instrument groups and fragmentation, as seen between the woodwinds and strings in both excerpts. Example 2c shows that fragmentation can be used to manipulate melodic fragments for developmental purposes. The secondary-parameter network observes this passage's reliance on quarter- and eighth notes, though in no particular pattern, and that they constitute more discrete one-measure units than usually seen.





Example 2a. Bohuslav Martinů, Symphony No. 1, I, mm. 102-106: Faster alternation between instrument groups and fragmentation are typical developmental techniques.



Example 2b. Bohuslav Martinů, Symphony No. 1, I, mm. 115-116: Another example of faster alternation between instrument groups and fragmentation.



Example 2c. Bohuslav Martinů, Symphony No. 1, I, the pickup to mm. 227-229: Martinů uses fragmentation to manipulate the melodic materials from previous zones.

The recapitulation of this movement includes all expected zones from the exposition: P, TR, and S, as defined by their respective secondary parameters, though not in precisely the same ways as previously heard. As previously mentioned, an inexact recapitulation is typical of twentieth-century sonatas, so this has no bearing on this movement's status as a sonata form. Rather, Martinů's recapitulation demonstrates several techniques that composers can use to vary their recapitulations, including adding harmonies, abbreviating melodies, and developing a new melody based on a prominent motive. The key areas at play further the recapitulation's variation, as this section fluctuates between Bb-major and B-minor before settling on B-major in the coda. Example 3a shows how the P zone returns with slight variation. Like its expositional iteration, instrumentation, register, rhythms, and homophonic texture define this formal function; the planning, in addition to the homophonic texture, creates a fuller accompaniment but ultimately does not interrupt the secondary-parameter network's analysis. Even with some adjustments to secondary parameters, the secondary-parameter network still clearly defines the P zone's return and thus marks the start of the recapitulation.



Example 3a. Bohuslav Martinů, Symphony No. 1, I, mm. 250-253: The recapitulation includes P with its clear (instrumentation and register) and homophonic texture (with planing).

The recapitulation includes TR and S in extremely abbreviated forms. Example 3b shows the TR, which occurs in the second measure of this excerpt through an ascending scale. It concludes with a MC. The tempo changes after the MC, further solidifying the TR's brevity. Example 3c presents the beginning of S, which capitalizes on S's instrumentation and the idea of oscillation. The latter, which was critical to S's basic idea in the exposition, now encapsulates the entirety of S in the recapitulation.



Example 3b. Bohuslav Martinů, Symphony No. 1, I, the pickup to m. 260 - the downbeat of 262: The recapitulation includes the TR with ascending scales and sixteenth notes, and its consequent MC.



Example 3c. Bohuslav Martinů, Symphony No. 1, I, mm. 262-265: S, in the recapitulation, focuses on its instrumentation and oscillating basic idea.

In summary, the first movement of Martinu's First Symphony is an idiomatic example of twentieth-century sonata form. It includes clearly identifiable P and S zones, a TR with energy-gain, a development based primarily on fragmentation, alternation between diverse instrument groups, and a recapitulation that includes P and references both S and TR.

I will next turn to one more example of a typical mid-century sonata-form based movement, the first movement of Persichetti's Symphony for Band, before moving to my repertoire of primary focus. Table 4 shows that, overall, this movement includes an exposition, development and recapitulation, the first of which includes P, TR, and S zones. The constituent parts of the exposition are all marked by their individual instrumentations, rhythms, and contrapuntal textures. Again, key areas can help determine interthematic formal function. The development features repetition and sequencing, more contrapuntal textures, new instruments, and alternation between instrument groups. Due to a significant choice by the composer for P, the recapitulation need not include this zone, and, indeed, does not: P also functions as a slow introduction (slow intro ==> P) so that Persichetti has a choice to include or exclude it from the recapitulation.

	Exposition	
	P: mm. 1-20	-instrumentation: horn; low winds/brass accompaniment
	(Slow Intro \Longrightarrow P: mm.	-tempo: Adagio
	1-20)	-time signature: 4/4
		-rhythms: dotted quarter notes, quarter notes, eighth notes
		-texture: contrapuntal (horn/woodwinds and percussion; brass)
		-dynamic: <i>mezzo-piano</i>
		(Bb-major)
	TR: mm. 21-60	-energy-gain:
		faster tempo and rhythms
		-fragmentation
		(F-major)
	S: mm. 61-110	-instrumentation: brass and woodwinds
		-tempo: Allegro
		-time signature: 2/4
		-rhythms: eighth- and sixteenth-notes; hemiola
		-texture: homophonic
		-dynamic: <i>mezzoforte</i>
		-EEC: m. 110
		-closing zone: mm. 111-119
		(Ab-major, A-major, EEC in F-major)
	D 1	
	Development: mm.	-fragmentation (mm. 122-125)
	120-219	-repetition and sequencing
		-contrapuntal entrances (mm. 12-125)
		-new instruments (tuba, mm. 141-144))
		-taster alternation between instrument groups (mm. 1/1-176)
	D	-chorale texture (new)
	Recapitulation: mm.	-euphonium: P reference?
ļ	220-279	-TR and S
	Coda: mm 280-292	
1	$\bigcirc \bigcirc $	

Table 4. Summary of sonata-defining parameters in Persichetti's Symphony for Band.

Example 4a shows how Persichetti's P zone is distinguished by its solo horn entry

before the entrance of the low winds and brass accompaniment, and continues with its

transfer to clarinet, bassoon, and alto saxophone. Though the second entrance (that of low woodwinds and brass) includes the incipit of the TR zone, Persichetti places it in counterpoint with the ongoing brass line. While P's incorporation of a contrapuntal texture is unusual, the zone is also distinguished by its long rhythmic values and slow tempo. Elements of tight-knit structure include its consistent instrumentation, conclusion with clear closure (m. 17, not shown), and beginning and ending in Bb-major. Its use of a chorale texture closer to the moment of closure reminisces of past slow introductions, so that elements of P and slow introduction are thus both present.



Example 4a. Vincent Persichetti, Symphony for Band, I, mm. 1-7: P begins with the solo horn before being transferred to the woodwinds. It is easily identified because it begins first, even though it has a contrapuntal texture.

Examples 4b and 4c show two excerpts from the transition, which demonstrates energy-gain in several ways. It includes a faster tempo (Allegro) and faster rhythmic values (eighth notes and sixteenth notes), which allows this zone a more active (and energetic) accompaniment than those of P and S. Persichetti's TR also includes a homophonic texture, and it moves to an F-major key area. Example 4c also includes fragmentation and quick alternation by the clarinets and oboes. Overall, its faster tempo, contrapuntal nature, and fragmentation increase energy in Persichetti's TR.


Example 4b. Vincent Persichetti, Symphony for Band, I, mm. 25-28: The TR begins with a faster tempo and faster rhythmic values (eighth- and sixteenth notes).



Example 4c. Vincent Persichetti, Symphony for Band, I, mm.42-46: The TR includes fragmentation and faster alternation between instrument groups that contribute to its energy-gain.

Example 4d shows that the S zone occurs in the horns and trumpets (new instruments) and is part of a homophonic texture with the support of low woodwinds and brass. This zone is easily identified through its eighth-note pairs and use of cross-rhythm defines this zone. A hemiola's fragmentation and harmonic acceleration help usher in closure, and, in this case, S's emphasis on this gesture destabilizes it. The 3/4-against-2/4 rhythmic disjunction is one aspect of S's loose-knit qualities; others include its longer length, alternations between woodwinds and brass instruments, and motion between three key areas (Ab-major, A-major, and F-major). Example 4e previews the movement's closing zone, whose long notes and slower harmonic rhythms emphasize its concluding formal function within the exposition. The contrast between S and the closing zone is striking due to the latter's longer rhythms, slower harmonic rhythm, and inclusion of wind instruments.



Example 4d. Vincent Persichetti, Symphony for Band, I, the pickup to m. 61-66: S presents new rhythms and instruments, and with homophonic texture and cross-rhythm.



Example 4e. Vincent Persichetti, Symphony for Band, I, mm. 110-119: The closing zone has longer note values and slower harmonic rhythm.

Examples 5a-c show excerpts from Persichetti's development, which demonstrates standard developmental techniques, including fragmentation and contrapuntal entrances, and featuring a new instrument. Example 5a shows contrapuntal entrances of the bassoons and saxophones, oboes and saxophones, and trumpets, which also fragment the TR zone. Example 5b previews the tuba's melody; this is the tuba's only featured moment in this movement. Example 5c shows how Persichetti employs a development's tendency to move quickly between instrument groups, moving quickly between the trumpets, percussion, and horns, euphonium, and tuba. This development thus demonstrates several idiomatic features of twentieth-century developments.



Example 5a. Vincent Persichetti, Symphony for Band, I, mm. 122-125: The development features fragmented, contrapuntal statements of the TR zone.



Example 5b. Vincent Persichetti, Symphony for Band, I, the pickup to m. 141-144: The development features the tuba.



Example 5c. Vincent Persichetti, Symphony for Band, I, mm. 171-176: The development also includes passages that move quickly between various instrument groups.

Examples 6a and 6b respectively show that, in his recapitulation, Persichetti includes only the TR and S materials. The TR zone returns with a new accompaniment and increased instrumental forces. The secondary-parameter network identifies its use of dotted-quarter-, eighth-, and sixteenth-note rhythms, and the presence of clarinets, as both secondary parameters are consistent with the TR's initial appearance in the exposition. The S zone returns as a reference, with similar instrumentation and rhythms, despite the fact that zone does not return as heard in the exposition. Example 6c shows a closing zone that reminisces of the exposition with longer note values and slower harmonic rhythms. Persichetti's recapitulation is thus more inclusive than is Martinů's, but, as both recapitulations demonstrate some repetition from their preceding expositions, they both fulfill the function of the twentieth-century recapitulation.



Example 6a. Vincent Persichetti, Symphony for Band, I, mm. 226-229: The TR returns in recapitulation with the same rhythms but new accompaniment.



Example 6b. Vincent Persichetti, Symphony for Band, I, mm. 237-240: S returns in the recapitulation through instrumentation and rhythms, even though the exact melody from the exposition does not return.



Example 6c. Vincent Persichetti, Symphony for Band, I, mm. 260-263: The closing zone demonstrates longer note values and slower harmonic rhythms.

The P zone is notably lacking in Persichetti's recapitulation through the absence of its secondary parameters. This is because the Persichetti's slow introduction "becomes" (in the Schmalfeldtian sense) P, which Table 4 shows with the label "slow intro ==> P." The dual status afforded by the becoming allows Persichetti to choose how to treat this entity in the recapitulation—that is, if he wants it to act as a P zone, with its inclusion in the recapitulation, or as slow introduction, without it. Persichetti chose the latter. For Caplin, slow introduction expresses before-the-beginning function, while the P zone possesses an initiating function at the interthematic level. Their merge does have implications for the recapitulation, as demonstrated by this movement's omission of P in its final section. Persichetti decides that the before-the-beginning function is, ultimately, more important for his movement as a whole.

As discussed, the first movement of Persichetti's Symphony for Band includes P, TR, S, and a closing zone in the exposition, a development, and a recapitulation. The P, TR, and S zones all have their own unique identifying features—that is, each zone possesses its own individual combination of secondary parameters that defines it and its formal function. TR demonstrates energy-gain through a faster tempo and rhythms, and new rhythms and instrumentation define S. The development is based on repetition, sequencing, contrapuntal entrances, and alternation between instrument groups, before the recapitulation recapitulations TR and S. Persichetti can omit P because it also functions as a slow introduction.

Having established how the secondary-parameter network determines sonata form, I will now apply this same analytic method to late twentieth-century symphonic repertoire. We will see that symphonic repertoire of the late twentieth century can be parsed by canvassing these movements for secondary parameters. After identifying P, TR, S, expositions, developments, and recapitulations, we will see how sonata form continues to manifest in the late twentieth century, whether composers intended its continuance or not.

A Note on Closure

The above form charts referenced several moments that are vital to sonata form in the Sonata Theory reading: the medial caesura (MC), essential expositional closure (EEC), and essential sonata closure (ESC). All of these moments are cadences, or, more broadly put, moments of closure. Closure is not required for movements to maintain sonata-form structure in the late-twentieth century and, under the secondary-parameter network's analyses, the identification of the MC, EEC, and ESC does not have any bearing on a moment's underlying sonata-form structure. This said, the consistent presence of closure-especially at the end of the transition and S zone—seems so strongly salient so that it is worth addressing in this project. By defining formal junctions between interthematic formal functions, the secondaryparameter network's analyses indicate where to look for moments of closure: closure at the end of an interthematic formal function but before any sort of post-closural material. In other words, the secondary-parameter network incites a reverse-engineering process for moments of closure in late-twentieth-century repertoire. These moments of closure in late-twentiethcentury repertoire also demonstrate several compellingly consistent voice-leading techniques. The fact that moments of closure remain at the end of each interthematic formal function more deeply entrenches late-twentieth-century sonata-form movements into the sonata structure.

After previewing the closural qualities in late-twentieth-century repertoire, the next section briefly reviews some previous considerations of closure in twentieth-century repertoire before applying the perspective developed here to two mid-twentieth-century neoclassical examples and two late-twentieth-century examples. The following chapters of this dissertation will show how these gestures remain in late-twentieth-century sonata repertoire, but the present discussion will only preview this analysis. Instead, my current focus is to contextualize the secondary-parameter network-based approach with respect to previous scholarship and establish these parameters in some of this scholarship's examples and in twentieth-century repertoire. One major difference between my analytical method and that of other scholars is that, instead of scrutinizing how secondary parameters change at these moments, I use secondary parameters to define junctions between subsequent thematic statements or formal functions, where voice-leading and harmonic consistencies occur.

After the secondary-parameter network recognizes changes in formal function, scrutiny of a formal function's concluding moments reveal that melodies move by stepwise motion, after which they rest, and harmonies move from more discordant to more concordant. This tripartite congregation of motion appears to be vital to closure in late-twentieth-century symphonic repertoire, as these occur at most—that is, nearly all—moments of closure in late-twentieth-century repertoire. Identifying significant moments of closure such as those mentioned above further cements late-twentieth-century repertoire's rootedness in sonata form. I (and the other scholars invoked here) take up the perspective that "twentieth-century music communicates closure by new means whereby the semiosis of closure does not disappear, but only requires adjustment as different signifiers take over the work hitherto performed by traditional cadential formulae."⁹⁰

⁹⁰ Clare Sher Ling Eng, "The Problem of Closure in Neo-Tonal Music," *Music Theory Spectrum* 41, no. 2 (Fall 2019): 289.

Closure in twentieth-century repertoire is similar to the notion of cadence in functionally tonal music, in that cadences often conclude a phrase or theme while their presence is not required. A significant difference between closure in twentieth-century and functionally tonal repertoire is that interthematic formal functions can be challenging to recognize in the former, but the ease of interthematic form-functional identification has no bearing closure. In other words, processes of closure are likely to occur, whether or not clearcut intrathematic formal functions are present.

Robert G. Hopkins and Amari Pepper Barash use secondary parameters to define closure in twentieth-century music ranging from Mahler's symphonies to post-tonal piano works by Boulez and Messiaen.⁹¹ On the one hand, Hopkins hypothesizes that secondaryparameters became of increasing importance as composers began to avoid functionally tonal cadences around the turn of the twentieth century.⁹² Composers' continued reliance on secondary parameters created an "interrelated and interdependent" relationship between tonal function and secondary parameters.⁹³ On the other hand, Barash develops ten criteria that, she claims, are universal markers of cadences in western music: duration, silence, contour, centricity, activity level, motivic and phrasal repetition, tempo, dynamics, texture and color, and articulation.⁹⁴ Both scholars examine closure via the detailed collaboration of secondary parameters towards a moment of cadence or closure.

Maler works towards a "broaden[ed] and generaliz[ed]" definition of a cadence for twentieth-century repertoire in her analysis of Schnittke's String Quartet No. 3 and Concerto

⁹¹ Robert G. Hopkins, *Closure and Mahler's Music: The Role of Secondary Parameters* (Philadelphia: University of Pennsylvania Press, 1990); Amari Pepper Barash, "Cadential Gestures in Post-Tonal Music: The Constitution of Cadences in Messsiaen's II de Feu I and Boulez' Premiere Sonate, First Movement," (DMA dissertation, The City University of New York, 2002).

⁹² Hopkins, Closure and Mahler's Music, 63.

⁹³ Hopkins, Closure and Mahler's Music, 1.

⁹⁴ Barash, "Cadential Gestures in Post-Tonal Music," 9, 10-13, 9.

for Viola and Orchestra.⁹⁵ The opening of Schnittke's String Quartet No. 3 poses questions about cadential function and content, and this distinction and their re-conception are vital to understanding cadences in post-tonal repertoire. Schnittke sets up each Lasso cadence for failure so that the opening cadence "is constantly engaged in a process-of-becoming function" in the first movement and "works to transform the cadence and undermine its tonality" in the second movement.⁹⁶ The third movement of Schnittke's String Quartet No. 3 confirms that "the form-functional meaning of the cadence is dissolved, and it is free to become other functions over the course of the quartet, acting to open, to prolong, and to liquidate themes."⁹⁷ While this movement presents an extreme case of reinterpreted cadential function, Maler makes a compelling case for the need of a wider conception of what cadence—and, by extension—closure means in twentieth-century repertoire.

Maler's discussion of Schnittke's cadences supports the present construction of closure because she demonstrates how necessary it is to rethink what ideas such as "cadence" mean for twentieth-century repertoire. By employing the word "closure" in place of "cadence" and acknowledging that the latter requires functional tonality, Hopkins extracts the essence of why the idea of "cadence" is important: it is an ongoing "psychological phenomenon" that brings a sense of satisfaction "when a process is relatively complete and stable."⁹⁸ Scholars generally agree with the corroboration of functional tonality and cadence, so I will follow Hopkins's precedent and use the word "closure."⁹⁹ When put together, these

⁹⁵ Maler, "Hearing Form in Post-Tonal Music," 166.

⁹⁶ Maler, "Hearing Form in Post-Tonal Music," 199, 204.

⁹⁷ Maler, "Hearing Form in Post-Tonal Music," 212.

⁹⁸ Hopkins, Closure in Mahler's Music, 2-5.

⁹⁹ See, for example, William E. Caplin, "The Classical Cadence: Conceptions and Misconceptions," *Journal of the American Musicological Society* 57, no. 1 (Spring 2004): 68-69; and Markus Neuwirth and Pieter Bergé, "Introduction: What is a Cadence?," in *What Is a Cadence?: Theoretical and Analytical Perspectives on Cadences in the Classical Repertoire*, ed. Markus Neuwirth and Pieter Bergé (Leuven: Leuven University Press,

scholars draw on repertoire ranging from the early twentieth century (Hopkins's analyses of Mahler's symphonies) to late (Maler's analyses of Schnittke's Viola Concerto (1985) and Third String Quartet (1983)), which shows that secondary parameters are significant throughout the twentieth century. Furthermore, while Barash and Maler focus on post-tonal music, Hopkins's focus on Mahler's music reveals that similar processes so that secondary parameters are not unique in defining closure in post-tonal music. Furthermore, Hopkins and Barash both discuss secondary parameters in music that, in some cases, significantly predates the twentieth century, which further establishes the historical importance of secondary parameters at moments of closure.

Having discussed some perspectives on closure on twentieth-century repertoire, I will lay out (in greater detail) the voice-leading and harmonic qualities that are often present with significant changes of secondary parameters. Then, I will extract one of Maler's examples demonstrate how these qualities play out in a cadence identified independently from the secondary-parameter network. After this discussion, I will return to the two case studies discussed above (the first movements of Martinů's First Symphony and Persichetti's Symphony for Band) to explore these qualities in neoclassical repertoire before turning to two moments of closure in examples from later chapters of this dissertation.

Essentially, there are three elements of closure in twentieth-century music, that involve the voice-leading and harmony, and which can be extracted after the secondaryparameter network identifies a change of section. These are present in both mid-century neoclassical repertoire and in that of the late twentieth century, as well as in many of the

^{2015), 7.} This said, some scholars continue to employ the word "cadence" when discussing non-functionally tonal repertoire (see Damien Blättler, "Radically Inconspicuous Absence: Truncated Sonata Forms in Interwar Paris," *Music Theory Spectrum* 46, no. 1 (Spring 2024): 109, 115-116, 118, 123, 127-128) and for post-tonal repertoire (Barash, "Cadential Gestures in Post-Tonal Music"; Maler, "Cadential Function and Rhetoric in Works by Schnittke and Ligeti," in "Hearing Form in Post-Tonal Music" (Ph.D. diss, University of Chicago, 2018), 153-214; and Maler, "Listening to Phrase Structure," 48-49, 50.

examples presented by Hopkins, Barash, and Maler. On the voice-leading side, stepwise motion occurs in the melody (in at least one voice, but sometimes in two voices via contrary motion), and, if present, underlying harmonies move from discordance to concordance. Stepwise motion is consistent with Barash's criteria of contour, and a move from discordance to concordance adheres to Hopkins's observations.¹⁰⁰ Any voices involved with stepwise motion rest after achieving it, which facilitates a change of instrumentation; this fact is of paramount importance, as it incites changes to other secondary parameters that are requisite to defining form. The stepwise voice's absence creates space for a new instrumentation that brings its own network of secondary parameters and thus establishes a different formal section. As discussed above, the secondary-parameter network observes these changes and assigns the presence of a new formal section, so that the stepwise motion and changes of harmony would seem to be the primary motivators for closure.

In this respect, the secondary-parameter network is vital to help detect moments of closure and formal junctures in late twentieth-century repertoire. While it does not, as Barash and Hopkins do, seek out how secondary parameters signal and execute impending closure, the secondary-parameter network identifies changes of formal section. From there, the stepwise motion and harmonies that move from discordance to concordance are more easily discernable. Even though these voice-leading procedures do not need to be present to identify formal changes, their presence helps identify moments in late-twentieth-century repertoire where cadences—including the medial caesura, essential expositional closure, and essential sonata closure—were historically present. Their continued presence—and, in some cases, emphasis—suggests that stepwise motion and the move from discordant to concordant harmonies have become historical tropes which, consciously or not, composers continued to employ throughout the twentieth century. The following analyses demonstrate how these

¹⁰⁰ Barash, "Cadential Gestures in Post-Tonal Music," 11; Hopkins, *Closure and Mahler's Music*, 41.

moments of closure work in twentieth-century repertoire. The five examples discussed below show how secondary parameters and voice-leading procedures collide at formal junctures.

The definition of closural procedures built here shows how late-twentieth-century conventions of closure "modify those of an earlier period while not replacing them entirely."¹⁰¹ While Clare Sher Ling Eng cautions against corpus-convention definitions of topics such as closure because "presumes that all composers in the corpus applied the same procedure in the same way to achieve the same communicative ends," the guidelines set forth here are sufficiently common in music that their coincidence cannot be ignored.¹⁰² Stepwise motion regularly occurs in melodies, as do leaps, but nevertheless persists between penultimate and ultimate melodic notes. I previously demonstrated how secondary parameters change to define formal junctions; when instruments that participated in the closural stepwise motion rest or stop playing, they create space for new instruments to take up the torch, so to speak, and incorporate their own network of secondary parameters. Harmonies fluctuate in terms of discordance and concordance, but what, exactly, a discordant or concordant harmony depends on each composer's individual musical style and provides flexibility for "composer-conventions."¹⁰³ (The use of block juxtapositions, such as those which occur in Igor Stravinsky's music, constitutes another composer-convention, so that an analyst must look for closural indicators other than changes to secondary parameters.) However, even with the generalities presented by this approach, it is worth stressing that only most moments of closure embody all three criteria; occasional examples do not include stepwise motion or discordant-concordant harmonic motion. By relying primarily on secondary parameters to define formal junctions, I take Eng's point that not all composers

¹⁰¹Eng, "The Problem of Closure": 287.

¹⁰² Eng, "The Problem of Closure": 289.

¹⁰³ Eng, "The Problem of Closure": 287.

follow precisely the same closural formulae; the secondary-parameter network helps locate closure so that voice-leading and harmonic procedures are not the only criteria.

To demonstrate how these parameters operate in a piece of music, I would like to revisit Maler's work for her analysis of Schnittke's Concerto for Viola and Orchestra. Example 7a shows that Maler's Figure 4.2, in which she identifies a cadence at the end of the Viola Concerto's opening sentence. While Schnittke did not restrict himself to writing only or even primarily—sentential phrase structures throughout his career, Maler's example provides a helpful starting point for the application of closural procedures because, as a clearcut sentence, she can easily identify and discuss "the cadence in m. 8."¹⁰⁴ In other words, Maler found a cadence based on the presence and interactions of intrathematic formal functions, but it still adheres to the qualities discussed above.



Example 7a. Alfred Schnittke, Concerto for Viola and Orchestra, I: mm. 1-8: Maler identifies the opening sentence and its concluding cadence, which includes changes to secondary parameters as well as stepwise melodic motion and movement form discordant to concordant harmonies.

¹⁰⁴ Maler, "Hearing Form in Post-Tonal Music," 169-170.

While the goal of Maler's analysis is to show how this work "stages a rupture between cadential content and function," which leads to two different types of cadences, she extracts several qualities of closure, which will be the focal point of the present discussion.¹⁰⁵ Maler explains that the sentence's cadence is marked by chromatic contrasting motion in conjunction with the motion from a dissonance to a consonance, "durational closure," a decrescendo, return to the opening register, and return of the opening motive.¹⁰⁶ Though Maler employs secondary parameters to identify a cadence akin to the methods proposed by Hopkins and Barash that were discussed above, the secondary-parameter network could identify the durational close, decrescendo, and return to opening register; changes to rhythms, dynamic, and register also help establish the next phrase, which begins in m. 9. What is more important in her discussion of the m. 8 cadence is that the viola moves by stepwise motion (G to an Ab anticipation in m. 7), and the upper voices' harmonies move through an augmented fourth in m. 7 (C and Gb) to a perfect fifth in m. 8 (Cb and Gb). (I do not consider the accompanimental chromatic cluster for discord-concord resolution because it acts as a pedal.) Additionally, Example 7b provides Maler's analysis of the next phrase, but the important fact for m. 8's closure is that the viola line (which presents the melody) rests in the beginning of m. 9, after its m. 8 resolution. While Maler includes secondary parameters to help identify a cadence, her identification of stepwise motion and the resolution of a dissonant interval to a consonant one are vital to the m. 8 cadence, and to the definition of closure constructed here.

¹⁰⁵ Maler, "Hearing Form in Post-Tonal Music," 156.

¹⁰⁶ Maler, "Hearing Form in Post-Tonal Music," 169-170.



Example 7b. Alfred Schnittke, Concerto for Viola and Orchestra, I: mm. 9-17: The viola rests after its resolution in m. 8.

The same qualities of stepwise motion, rests or longs notes in the stepwise voice, and motion from discordant to concordant harmonies are present in mid-century neoclassical repertoire. In the first movement of Martinů's First Symphony (discussed above), the MC that concludes the transition demonstrates these closural parameters. Example 8 shows that it includes stepwise motion in the melodic voices, which are, here, chromatic. M. 38's C⁷ chord moves to a G-major triad in m. 39—in other words, the harmony underlying the second beat of m. 38 is more discordant than that in m. 39. While sustained notes can be sufficient for significant changes of instrumentation, Martinů includes rests after the dotted half note in m. 40 that incite changes of secondary parameters—the violins present an eighth- and sixteenth-note gesture that serves as caesura-fill in m. 40. Thus, Martinů's MC—an event that is historically a cadence—features the voice-leading events that are common in moments of closure in twentieth-century repertoire.

Closure (MC)



Example 8. Bohuslav Martinů, Symphony No. 1, I, mm. 38-40: The MC features stepwise motion, rests, and motion from discordant to concordant harmonies that indicate its function of closure.

A moment of closure also appears at the end of the S zone in Persichetti's Symphony for Band (also discussed above). Example 9 shows that stepwise motion occurs in the flutes, oboe, and clarinet, which rest after achieving their highest note. The discordant harmony comprised of A, Bb, C \ddagger , D, and E leads to a concordant F-major triad. (The score indicates that the third Bb cornet should play G \ddagger 4 (sounding F \ddagger 4), but this does not follow the unisons that cornets and trumpets had previously, so the inclusion of G \ddagger seems likely to be an error.) The winds' rests force the brass instrumentation and chorale texture to the fore, so that the changes of secondary parameters reinforce the closure that occurs at m. 110. The fact that closure occurs here (at the end of the S zone) means that it occurs in the location of the EEC and thus fulfills the same function.



Example 9. Vincent Persichetti, Symphony for Band, I, mm. 106-111: Closure occurs at m. 110 through stepwise motion, rests, and a discordant to concordant harmony.

Having discussed how moments of closure occur in mid-century neoclassical repertoire, I will turn to two examples from the late twentieth century. Excerpts from the first movements of Einojuhani Rautavaara's Third Symphony and Isang Yun's First Symphony demonstrate that these same features—stepwise (melodic) motion, rests in the stepwise voice, and discordant to concordant harmonies. Both of the following examples will be discussed in greater detail in later chapters.

Example 10 provides an excerpt from the first movement of Rautavaara's Third Symphony to show how closure occurs between the retransition and recapitulation in m. 166; an arrow marks the moment of closure in Example 10. The voices that maintained contrapuntal structure (flute, clarinet, oboe, and trumpet; and trombone, timpani, and bass) both present stepwise motion into their last notes (F[#] to E and E^b to E-natural, respectively), and the chromatic wedging-out motion allows a less concordant sonority (a minor third, here written as an augmented second) to a more concordant sonority (an octave). Both lines also have rests after reaching their culminating notes, which allows for a change of instrumentation: the violins begin a tremolo that ushers in the recapitulation. The rhythms, dynamic, and tempo also change at this junction to further establish the new formal section.



Example 10. Einojuhani Rautavaara, Symphony No. 1, I, mm. 164-174: Contrapuntal stepwise motion forms a dissonant interval that then resolves, and both voices rest after the dissonance's resolution to create a moment of closure.

Example 11 shows a passage from Isang Yun's First Symphony. P's closure occurs at m. 18, where all six horns play whole notes, and is marked by an arrow in the example. Stepwise motion occurs in four of the six horn parts, including in the top voice. The harmony moves from a discordant chord that includes C\$, Eb, A, and G, to superimposed Bb-major and G-minor triads. Even if the horns do not rest after the first beat of m. 18, their long rhythmic value (two dotted whole notes that are tied together) affords space for the strings to begin transitional material, as seen by their sixteenth notes in the same measure. The strings' entrance brings immediate changes to instrumentation and rhythmic values, which suggest the presence of a new formal section. Chapter 3 corroborates this analysis and discusses it in further detail, but the preliminary secondary-parameter network analysis here shows how voice-leading qualities create closure at the end of a formal section.



Example 11. Isang Yun, Symphony No. 1, I, mm. 16-19: P concludes with stepwise motion and long rhythmic values on a more concordant harmony to establish closure.

I want to reinforce the secondary-parameter network's role in identifying moments of closure to conclude this discussion. Its strength lies in identifying moments of closure, based on the presence of significant changes of secondary parameters, which can then be scrutinized for closural qualities. Essentially, as numerous secondary parameters change in

shorter amounts of time, cadences are more likely to occur. When many secondary parameters change over a longer period of time, the composer is more likely playing with formal boundaries in an instance of a becoming or permeable boundary (see Chapter 3). If few or no secondary parameters change across any time span, it is less likely that any cadence has occurred and more likely that the music retains the same formal function. Table 5 summarizes this discussion.

	More secondary parameters change	fewer secondary parameters change	
Short time	Cadence	No closure; same formal function	
Long time	Permeable boundary OR becoming	No closure; same formal function	
Table 5. A summary of conditions under which address are more or loss likely to occur			

Table 5. A summary of conditions under which cadences are more or less likely to occur.

The model presented here is sufficiently flexible to account for a variety of musical repertoire through its reliance on relative terms, for secondary parameters, and general stipulations for voice-leading closure. The continued recurrences of significant moments of closure after the transition and S zone reflect composers' integration of these structural moments into late-twentieth-century musical parlance. While the above discussion does not comprehensively cover moments of closure in late-twentieth-century repertoire, I hope to have provided enough information to suggest that composers do, indeed, continue to write moments of closure, and to lay out some of my criteria for identification of closure in the repertoire studied for this project.

Phrase-level closure is important in late-twentieth-century repertoire for some of the same reasons as to why cadences are necessary in functionally tonal music. Both reveal a hierarchical structure within their respective repertoires—in other words, not all moments of closure are created equal. Additionally, even if it was not possible for late-twentieth-century composers to write cadences, the idea of something to help punctuate seems to have developed as a trope for composers to grab on to and execute at formal boundaries, even if closure is not required for a change of formal function; the medial caesura is an excellent example of this case.

In late-twentieth-century repertoire, the presence of closure indicates that an interthematic formal function is might end, but changes to secondary parameters are the true measure of formal boundaries. It is possible for a moment of closure to occur with all required characteristics (stepwise motion that is accompanied by a move from discordant to concordant harmonies and rests in the stepwise voice) and that minimal secondary parameters change at this moment of closure. It is common, though, for substantial numbers of secondary parameters to change with moments of closure. Because the latter contributes to form, this moment of closure is more structurally significant than the former, where few secondary parameters change. A moment of closure that accompanies only one change of secondary parameter, for example, indicates internal punctuation at a lower hierarchical level, while a moment of closure, concomitant with many secondary-parameter changes that identify a change in formal function, occurs at a hierarchical level. The correlation of moments of closure and changes to secondary parameters suggests that composers continued to think about musical structure and strengthens the argument for treating secondary parameters as arbiters of form.

The medial caesura's role as a trope in late-twentieth-century repertoire serves as a case study for the importance of closure in this music. The secondary-parameter network identifies the change in formal boundary (from TR to S zone) through secondary parameters, but the persistence of closural procedures reinforces the historically important switch from TR to S zone. Even though closure does not need to be present, composers seem to continue to make a big deal about the end of the transition, whether consciously or not, and the procedures of closure are one way with which they can so do. To be sure, medial caesuras in the late twentieth century are messy moments—there is often a lack of pause due to caesura-fill, but there is also frequent overlap with the S zone or some sort of wind-up materials that help obfuscate this moment (see Chapter 3 on Isang Yun's Symphony No. 1). This said, their

continued presence (which is sometimes quite easily identified, such as in Rautavaara's Third Symphony (Chapter 2) and Rouse's Second Symphony (Chapter 6)) creates an almost tangible connection to earlier sonata-form movements, where medial caesurae had various harmonic defaults.

Outline

The remainder of this dissertation delves into repertoire and analytical studies. Most chapters present one case study that exemplifies both how secondary parameters can be used to identify sonata form, and a novelty of late twentieth-century symphonic sonata form. All chapters include theoretical and analytical discussions, though not always in that order. The following chapters are loosely organized by how easily recognizable each movement is based on a conventional generic understanding of sonata form—that is, the extent to which each movement is "sonata-like." Following the analogue to Harrison's suburbs of tonality, the earlier chapters present movements that are closer to the city of sonata form, and the later chapters discuss more remote movements. The more "sonata-like" a movement is, the closer it will be to the city of sonata form, and the closer to the beginning of this dissertation. The fact that this dissertation's chapters generally follow the order of sonata form (that is, the chapters on expositions occur before those of developments) is a byproduct of this organization, though this does not mean that a judgment of sonata-likeness occurs early in the sonata process. Instead, sonata-likeness depends on a retrospective understanding of a movement's form.

A movement's sonata-likeness originates in how "well" it fits into the so-called box of sonata form as determined by the secondary-parameter network. A movement that is more sonata-like will include substantial changes in secondary parameters in a recognizable format: when P gives way to TR, when TR yields to S, when the exposition concludes and

the development begins, and when the recapitulation starts. Generally, the repertoire discussed in earlier chapters display this paradigm well, and that of later chapters take greater structural liberties. Each chapter in this dissertation confronts a few problems presented by sonata form in the late twentieth century via the secondary-parameter network. Together, these snapshots present an overview of what sonata forms do in this musical era and reveal analytical conundrums consistent with sonata-form repertoire of earlier centuries.

Chapters 2 and 3 argue that late-twentieth-century P, TR, and S zones in an exposition are each defined by their own unique combination of secondary parameters. Chapter 2 also argues that the exact return of at least one specific set of secondary parameters from the exposition identifies the recapitulation. Furthermore, Chapter 2 argues that changes to secondary parameters after the recapitulation locate the onset of late-twentieth-century codas and closing zones, and that these functions dissipate energy. Chapter 3 argues that consecutive themes and sections can overlap when a subsequent function's secondary parameters begin before the present function's secondary parameters have exited.

Through their discussion of developmental techniques in conjunction with the development section, Chapters 4 and 5 argue for late-twentieth-century sonata forms' middle sections continue to function as sonata-form developments. Chapter 4 argues that late-twentieth-century development sections rely heavily—sometimes even exclusively—on techniques such as fragmentation, repetition and sequencing, layering, and faster alternation between instrument groups. Chapter 5 argues that secondary parameters can elucidate these techniques.

Chapter 6 argues that monothematicism in the late twentieth century is defined by the consistency of secondary parameters between the P and S zones—that is, the same set of secondary parameters occurs in the P zone and, to some extent, the S zone. This chapter also argues that the medial caesura persists in the late twentieth century as a sonata-form trope

that continues to define the middle of the exposition through changes to secondary parameters and specific closural procedures.

Finally, Chapter 7 presents the conclusion. Inspired by Harrison, it explores the secondary-network's backwards compatibility through application to a sonata-form movement by Mozart Amadeus Mozart, and then explores how the secondary-parameter network responds to Wingfield's call for another method of sonata-form analysis through its potential for an ahistorical discussion of sonata form.

Ch. 2: Expositional Secondary Parameters and Recapitulations and Codas in Rautavaara's Third Symphony and Liebermann's First Symphony

The sonata-form underpinnings of the first movement of Einojuhani Rautavaara's Third Symphony (written 1959-1960, published 1961) are fairly recognizable through the movement's clear thematic structure. Its exposition's P, TR, and S zones could be used to define the movement's form, but the secondary parameter network provides an alternative and accurate way to define the form through its consideration of secondary parameters. The first movement of Rautavaara's Third Symphony presents an important starting place for the current project for this reason. The first part of this chapter argues that changes to secondary parameters define all three of the exposition's interthematic formal functions.

Then, the second part of this chapter turns to issues raised by Rautavaara's recapitulation and coda. It argues that the return of at least one set of expositional secondary parameters defines the recapitulation, and it considers the question, "if a recapitulation includes only one zone from the exposition, how can it fulfill recapitulatory function?" This section furthermore argues that, in a way akin to how secondary-parameter changes define each interthematic formal function, similar adjustments locate the onset of the coda and closing zone. The first movement of Lowell Liebermann's First Symphony serves as a second exemplar of the how the secondary-parameter network elucidates the relationship between recapitulations and codas. Overall, this chapter demonstrates how secondary-parameter network's power as an analytical tool originates in its power to observe musical change.

Along the way, I elicit concepts and definitions from Sonata Theory to discuss several moments in Rautavaara's movement. The fact that Hepokoski and Darcy's definitions of these concepts originate in tonal repertoire does not mean that they are obsolete in late twentieth-century. Instead, I take this to be in the spirit of dialogic form, so that some

eighteenth-century formal options remain available to late twentieth-century repertoire.¹ Medial caesuras, caesura-fill, and trimodular blocks also occur in the later repertoire, so Sonata Theory's vocabulary is helpful to orient this discussion.

Exposition

Einojuhani Rautavaara (1928-2016) was a Finnish composer who, throughout his compositional career, experimented heavily with many styles. After his musical studies in Finland, Jean Sibelius selected him as the winner of a scholarship for a year's study at Julliard and Tanglewood, where he studied with Vincent Persichetti, Roger Sessions, Aaron Copland, respectively, in 1957-1958. His return to Europe after these studies concluded spawned a compositional crisis, which resulted in his turn to the study of twelve-tone and serialist techniques, studying with Wladimir Vogel and Rudolf Petzgold and attending Darmstadt in the summer of 1957.² Tim Howell writes that Rautavaara embraced "elements of national romanticism, modernism, neo-classicism, serialism, neo-romanticism, postmodernism, mysticism, pantheism (the list is endless)," and that, when considering Rautavaara's music, "trying to pinpoint specific influences is less important than noting emerging characteristics."³ Synthesis of nature and mysticism are integral to Rautavaara's music, and Owen Burton demonstrates how analysts might approach Rautavaara's music from this perspective in his analysis of *Cantus Arcticus.*⁴

¹ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006), 615-616.

² Tim Howell, "Einojuhani Rautavaara—Something Old...Something New...," in *After Sibelius: Studies in Finnish Music*: 117.

³ Howell, "Einojuhani Rautavaara": 114, 117.

⁴ Owen Burton, "Rautavaara's *Cantus Arcticus*: National Exoticism or International Modernism?," *Twentieth-Century Music* 19, no. 2 (June 2022): 251-282.

Previous scholarship has examined the Third Symphony's position with respect to serialism and Bruckner's influence. Howell writes that this symphony "conceived from the outset as a combination of serial technique and Brucknerian style."⁵ Rautavaara wrote it while studying the twelve-tone technique with Vogel, and the piece is sometimes mentioned with his Second String Quartet, for both works encompass his early experiments with twelve-tone techniques.⁶ Rautavaara had also studied Bruckner's symphonies the previous year, and Aho examines how Brucknerian influence permeates Rautavaara's Third Symphony.⁷ Anne Sivuoja-Gunaratnam considers the aesthetic implications of combining romantic and serial languages: "more important than the possible thematic borrowings from particular Bruckner symphonies, is the general atmosphere the *Third Symphony* creates, which refers to past romantic tradition now resurrected by the serial technique. At the ideological and aesthetic levels, the contradiction is produced by the merging of (tonal) symphony aesthetics with serialism, which was intended to replace tonal logic, not to include it."⁸ Additionally, Samuli Tiikkaja briefly examines pitch content in Rautavaara's output via the Harmonic Circle, a circle that encompasses all twelve notes of the chromatic scale twice and organizes them by

⁵ Howell, "Einojuhani Rautavaara": 117.

⁶ Kalevi Aho, *Einojuhani Rautavaara: As Symphonist* (Helsinki: Edition Pan, 1998), 83; and Burton, "Rautavaara's *Cantus Arcticus*": 253. Aho, *Einojuhani Rautavaara*, 83-87 also discusses the Third Symphony's Brucknerian connections. On its serial nature, see Lisa de Gorog and Ralph de Gorog, *From Sibelius to Sallinen: Finnish Nationalism and the Music of Finland*, Contributions to the Study of Music and Dance 16 (New York: Greenwood Press, 1989), 156); Howell, "Einojuhani Rautavaara": 117; and Glenn Norman Koponen, "A Study of the Symphony in Finland from 1945 to 1975 With an Analysis of Representative Compositions" (Educat.D. dissertation, Columbia University, 1980), 102-103. However, Mikko Heiniö disagrees with the categorization of this movement's serialism, stating instead that the "fully tonal Third Symphony has Brucknerian grandeur" (Mikko Heiniö, "Einojuhani Rautavaara," *Grove Music Online*, edited by Deane Root, accessed October 11, 2022. oxfordmusiconline.com).

⁷ Aho, *Einojuhani Rautavaara*: 84-85.

⁸ Anne Sivuoja-Gunaratnam, *Narrating with Twelve Tones: Einojuhani Rautavaara's First Serial Period (ca. 1957-1965)* (Suomalainen Tiedeakatemia: Helsinki, 1997): 59.

alternating major and minor third, to show how Rautavaara generates pitch material for the first movement's opening.⁹

Despite scholars' attention to Rautavaara's synthesis of twelve-tone techniques and Bruckner's style, however, Rautavaara's Third Symphony has received little attention with respect to form. Aho provides an overview of its first movement's formal structure, but the scope of his project leaves him little room for detailed discussion. His comments are particularly provocative for this project: Aho believes that the first half of the Third Symphony's first movement resembles sonata form, but it "totally lacks a recapitulation," so Aho rejects the idea that this movement follows sonata-form structure.¹⁰ Aho bases this analysis on Rautavaara's views on sonata form (taken in 1980):

While still a student in formal analysis classes, I was genuinely astonished at the glee with which the teacher greeted the recapitulation or demonstrated how every detail of the development had its origin in the themes presented in the exposition. For me the recapitulation was an anti-climax, it was too predictable to be anything but disappointing. And the development seemed merely a variation mechanism. The return home is undoubtedly an archetype. But I expected more imagination and boldness from the prodigal son as a matter of course. The journey that does not lead into the great unknown is not worth making, at least in art.¹¹

One can surmise that his comments apply to functionally tonal sonata forms, as these recapitulations tend to be more exact and this is likely the repertoire studied in the classroom. Rautavaara's comments suggest that his use of sonata form would include some sort of unconventional recapitulatory strategies, if not also novel approaches to the development (Chapter 5 discusses his approach to the development of his First Symphony). The following discussion will suggest that, because the first movement follows an expositional structure, the

⁹ Samuli Tiikkaja, "Paired Opposites: The Development of Einojuhani Rautavaara's Harmonic Practices," (doctoral diss., University of Helsinki, 2019), 24, 135.

¹⁰ Aho, *Einojuhani Rautavaara*: 85.

¹¹ Aho, *Einojuhani Rautavaara*: 85-86.

movement is indeed in sonata form, and that Rautavaara's comments suggest how he might have chosen to remake the idea of "recapitulation" for the late twentieth century.

Table 1 shows the sonata form, as defined by secondary parameters, for the movement in question. The first movement of Rautavaara's Third Symphony is an excellent introductory example because all secondary parameters change in expected formal locations, so that its interthematic formal functions are easily recognizable. In other words, the following analysis tests the secondary-parameter network against a movement that other analytical perspectives would understand to be in sonata form.

Exposition: P: mm. 1-26	 -Introduction, based on P's accompaniment, mm. 1-5 -instrumentation: horn melody; strings' accompaniment; woodwind birdcalls -tempo: <i>Langsam, breit, ruhig</i> -time signature: 4/4 -rhythms: half notes, eighth notes, dotted quarter notes -texture: homophonic (horn melody and strings' accompaniment) -dynamic: <i>piano</i> -closure at m. 20; post-closure extension
TR: mm. 27-66	 -energy-gain: faster tempo and trills, fragmentation, faster alternation between instruments, louder dynamics -instrumentation: strings, woodwinds, brass -tempo: twice as fast -time signature: same -rhythms: sixteenth notes -texture: homophonic, but increasingly contrapuntal -dynamic: <i>piano, fortissimo</i> -MC: m. 66
S: mm. 66-113	 -instrumentation: strings; later alternating with brass -tempo: <i>Breit und langsam</i>, first tempo -time signature: 3/4, later 4/4 -rhythms: dotted quarter notes, eighth notes -texture: homophonic -dynamic: <i>fortissimo</i> -EEC: m. 112-113
Development: mm. 114- 166	 -exposition's themes in closer proximity -new tempo and performance indications -violas and cellos—new instruments -sequencing at m. 149 -retransition, mm. 164-166

Recapitulation: mm. 167- 178	 P's accompaniment with TR fragments -instrumentation: brass, violins, clarinet -tempo: twice as slow -time signature: 4/4 -rhythms: whole notes, half notes; sixteenth notes in violin and clarinet -texture: homophonic -dynamic: <i>pianissimo</i> -ESC: m. 179
Coda: mm. 179-end	 -instrumentation: horn, flute, clarinet -tempo: twice as slow as previous tempo -time signature: same -rhythms: whole notes, half notes; thirty-second note sextuplets in clarinet and flute -texture: sparser due to less instrumentation; homophonic (horn melody and strings' accompaniment) -dynamic: <i>mezzo forte, decrescendo</i> to <i>piano</i>

Table 1. The first movement of Einojuhani Rautavaara's Third Symphony, as defined by secondary parameters.

The following discussion explains how a unique combination of secondary parameters defines each zone so that a change to a new intrathematic formal function occurs with each substantial adjustment of secondary parameters. P, TR, and S can all be identified through their unique combinations of secondary parameters, but the TR possesses additional elements of energy-gain. Additionally, developmental techniques often assist in the energy-gain process in developments. The following discussion first establishes that, while P and S each display their own melodies, they both include customized sets of secondary parameters that also define these formal areas. Analysis of secondary parameters (by the secondary-parameter network) also illuminates the transition's trimodular block.

Example 1 shows the movement's opening, which includes its specific concatenation of secondary parameters. The P zone includes an instrumentation of strings, winds, and horn; a homophonic accompaniment; 4/4 time signature and relaxed tempo; slow rhythmic values; and quiet dynamics. Together, the opening network of secondary parameters defines the P zone. Under an alternative analytical purview, P might be defined as the horn's melody accompanied by strings' chords and woodwind birdcalls. However, the secondary-parameter network shows that this intrathematic formal function is much more than just its theme: it rests upon a foundation created by secondary parameters. In other words, even though a melody is present in the homophonic texture, the secondary-parameter network prioritizes its underlying secondary parameters for analysis.



Example 1. Einojuhani Rautavaara, Symphony No. 3, I, mm. 1-10: P is based on an instrumentation of strings, winds, and horn; a homophonic accompaniment; 4/4 time signature and relaxed tempo; slow rhythmic values; and quiet dynamics. P's introduction uses its instrumentation and homophonic accompaniment. © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company.

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The P zone possesses a number of tight-knit qualities, and many of these qualities

seem to relate to Rautavaara's interest in Bruckner's Fourth Symphony. The oscillations

between root-position and second-inversion triads suggest some sort of harmonic

prolongational structure in the first six or seven measures, and could even be said to establish

a D-minor harmonic area. The repetition of the same motivic material in mm. 6-7 also

supports P's tight-knit structure, and it also suggests a sentential phrase structure whose basic idea and repetition occur in these measures. Rautavaara's imitation of the opening of Bruckner's Fourth Symphony emerges through the presence of these conventional tight-knit qualities.¹² The horn's melody also suggests a moderately symmetrical 2+3 grouping structure in mm. 6-7 and 8-10, respectively.

Example 1 also shows that the P zone begins with a brief introduction to the theme before the horns' thematic entrance in m. 6 (marked with an arrow). Mm. 1-5 present thematic introduction as part of the P zone, rather than an introduction to the whole movement, because no secondary parameters change when the theme enters. This introduction is based on P's accompaniment, without the melody, and thus serves as a sort of prefix to the melody itself.

A passage that displays ambiguous formal function occurs after the transition (discussed below), but the secondary-parameter network helps elucidate its role in the form. Example 2 shows the transition-ending medial caesura (MC), which is defined by stepwise motion from the last eighth-note quintuplet in m. 66 to the eighth note on the downbeat of m. 67. The trumpets that participate in the quintuplet rhythm also create a dissonant diminished fifth (Ab-D) that resolves to a consonant third (A-C). The rests in the quintuplet voices allow for a change of instrumentation, even if the horn's entrance prevents a general pause. Under Sonata Theory, this excerpt might be considered caesura-fill because the horns carry whole notes through mm. 66-67.¹³ The stepwise motion, discordant to concordant motion, and rests that allow a change of instrumentation create a moment of closure in m. 66, which serves as the MC.

¹² Aho, *Einojuhani Rautavaara*: 82-83; and Barbara Blanchard Hong, *Rautavaara's Journey in Music* (Lanham, Maryland: Rowman and Littlefield, 2022), 141.

¹³ Hepokoski and Darcy, *Elements of Sonata Theory*, 40-45.





Example 2. Einojuhani Rautavaara, Symphony No. 3, I, mm. 64-76: After the MC in m. 66, the S zone's windup serves to provide it momentum for the coming proper theme.

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While the horns might initially render Example 2 to sound as caesura fill, they continue throughout the remainder of the passage, as S's secondary parameters continue to establish themselves. As this passage continues, the instrumental consistency calls the status of these two whole notes into question: Hepokoski and Darcy require caesura-fill to be independent of both TR and S, and to be a "sonic articulation of the gap separating the two zones,"¹⁴ but the horn leads to the establishment of S's secondary parameters. Furthermore, the addition of the clarinets' and flutes' noodling at the pick-up to m. 68 also calls a caesura-fill analysis into question. The presence of the viola's fragments are key, and it turns out that these motives are also vital to the second half of the S zone. Additionally, the strings increase in instrumentation after Example 2's conclusion (mm. 74-79) to further the establishment of S's secondary parameters. Essentially, if horn and woodwinds accompany S materials, then the horns' initial status as caesura-fill cannot be correct because this material belongs to the S zone.

Instead of looking backwards to the MC, so to speak, the passage excerpted in Example 2 looks forward to the S zone's arrival. Essentially, the S zone needs a few moments to gather momentum and organize its secondary parameters before it begins. I call this S's "wind-up" because it sounds as though the composer is winding up a music box, so to speak,

¹⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 40.

and the theme will simply flow when the winding concludes. In its barest forms, a wind-up is akin to a thematic introduction that occurs before the S zone (not the P zone, as will be discussed below), but where the secondary parameter's gradually establish themselves, so that a wind-up relates to what follows. A wind-up does not perturb the underlying sonata structure in any way. In contrast, most instances of caesura-fill relate to what preceded it. Most caesura-fill is akin to a suffix, and a wind-up is similar to a prefix. (One notable exception, though, is that Hepokoski and Darcy's "^5—^1 -descent type (^5—^1 linear fill)" can act like a suffix.¹⁵) It can occur in conjunction with caesura-fill, but a wind-up and caesura-fill are ultimately distinct processes (this phenomenon is discussed in Chapter 3). In this case, Example 2's secondary parameters had less similarity with those of the transition (discussed below) than with S, so a forward-facing interpretation has the most justification.

Example 3 shows that a number of new secondary parameters establish the proper S zone. It begins with a change of time signature and the instruction to return to the first tempo. As S unfolds, it is marked by a new instrumentation (string quartet), with a homophonic texture. Additionally, the *fortissimo* dynamic marking is also unique for the beginning of a zone in this movement, as both previous zones began quietly. Though it is arguably outside the scope of the secondary-parameter network, it is also noteworthy that Rautavaara changes compositional style for this zone, as it is a twelve-tone melody (starting with the C in m. 81 to the A in m. 84). The secondary-parameter network can clearly establish S's identity through its time signature, tempo, instrumentation, texture, and dynamic.

¹⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 41.



Example 3. Einojuhani Rautavaara, Symphony No. 3, I, mm. 81-88: S is marked by a new time signature, tempo, instrumentation, dynamic, and style.

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The S zone's loose-knit features include its identity as a twelve-tone row and lack of clear harmonic structure. Even though it includes a rhythmic motive of a dotted quarter note, syncopated quarter note, and eighth note, each iteration presents its own contour profile and suggests looser motivic relationships. As such, while the melody's rhythmic profile in mm. 81 and 82 is consistent, the changes of contour are not as quick to suggest any type of conventional phrase structure, thus rendering this theme more loose-knit than P (see Example 1). Considering the rhythmic profile suggests a 3+3 grouping structure, as does the crescendo to m. 84. Additionally, while closure occurs in m. 88, the S zone continues until m. 113, making it significantly longer than the P zone.

Thus far, the secondary-parameter network has clarified relatively straightforward formal functions: both of Rautavaara's P and S zones are relatively concise. This movement's transition (TR), though, presents a more complicated formal function in that it includes significantly more fluctuation of secondary parameters than the other two zones. The following discussion employs the secondary-parameter network to show how the TR includes a trimodular block.

Example 4 demonstrates that significant changes in tempo, instrumentation, dynamics, and contrapuntal texture occur in m. 27. These changes mark the beginning of the transition (TR). Many of these secondary-parameter changes lead to an air of energy-gain, on which Rautavaara capitalizes by writing fragmentation, trills, and faster alternation between

instrument groups. One might think that the combination of moving twice as fast and the violins' trills lend this section an air of increased energy, but their sixteenth-note rhythms actually sound slower after the tempo change. Their slower speed allows two other markers of transitional rhetoric to unfold: the birdcalls can now be more easily fragmented than with their previous rhythms, and an increased number of instruments can take part in the fragmentation. Mm. 32-34, in particular, exemplify these two additional secondary parameters. Additionally, as the birdcalls fragment, their range expands, though the reduced excerpt cannot include all these details. It will suffice to say that the flute sounds two octaves above Example 2's notes (mm. 7-8 of this excerpt), and the bassoon sounds two and three octaves, respectively, below what is written in Example 2 (mm. 8 and 9 of this excerpt). Upwards- and downwards- facing arrows indicate where these registral shifts occur in Example 2. The secondary-parameter network thus identifies the TR by its faster tempo, accompanimental trills, fragmented birdcalls, faster alternation between instruments, and expanded range.



Example 4. Einojuhani Rautavaara, Symphony No. 3, I, mm. 27-35: The TR is immediately defined by a change in tempo and the fragmentation of birdcalls. Each bracket shows where a new instrument enters. © Fennica Gehrman Oy, Helsinki

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Example 5 shows that this section includes a new melody that is accompanied by a yet busier texture than previously heard. This new, faster-moving accompaniment serves as another indicator of the TR's energy-gain, as does its increasing complexity as the TR zone continues. The theme itself, presented by flute and clarinet, is also at a *fortissimo* dynamic level. The new accompaniment and louder dynamic are two new secondary parameters for this zone, but the fact that it continues the energy-gaining momentum of the previous measures indicates that it still possesses transitional rhetoric.



Example 5. Einojuhani Rautavaara, Symphony No. 3, I, mm. 38-43: The TR also presents a new melody (top staff) with an increasingly busy accompaniment (violin and trumpet). © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

It is interesting that a melody presents itself in the middle of the transition, rather than the beginning, and there are several possible reasons for this. On the one hand, the melody's late start parallels the P zone, in that both begin with an introduction based on their accompaniments. On the other hand, this passage might comment on how transitions are constructed. Hepokoski and Darcy allow a variety of types of transitions, including the "independent (separately thematized) transition," the "developmental transition," the "dissolving restatement," the "dissolving consequent," etc.¹⁶ Though they do not say as much explicitly, they expect a TR to employ only one strategy before ushering itself forward to the medial caesura (MC). In contrast, the TR seems to begin as a developmental transition (focusing on the birdcalls) but then switch to an independent transition—a move which seems to relegate the melody to secondary importance and thus more akin to a secondary parameter than one might assume at first glance. This combination means that factors other than melody (that is, secondary parameters) are necessary to understand this whole passage as the TR.

Example 6a shows that the TR continues to what initially appears to be a medial caesura (MC) that is articulated by violins' sixteenth notes and filled by a flute duet. This moment displays the stepwise motion and rests that tend to incite closure in late-twentieth-century repertoire. As in other cases, the violin's rests allow a new instrument (here, the flutes) to begin and establish a new section via instrumentation.



Example 6a. Einojuhani Rautavaara, Third Symphony, I, mm. 50-54: The transition appears to conclude with a medial caesura and MC-fill.

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Example 6b begins after the brief flute duet and shows that, instead of shifting

secondary parameters to establish a new formal section, the so-called MC-fill goes on to

¹⁶ Hepokoski and Darcy, *Elements of Sonata Theory*, 95-102.

build back up to the transitional zone with similar instrumentation as its previous iteration. This means that, instead of establishing S, the MC-fill turns around, so to speak, and sets up a second MC—a phenomenon known as the "trimodular block" (TMB).¹⁷ Though the instrumentation and dynamic levels fluctuate, there are not a sufficient number of secondary parameters to make mm. 52-56 (the flute duet) sound as a new section. Furthermore, the crescendo back to *fortissimo* in mm. 57-60, along with the return of the TR zone's previous instrumentation, confirm that this passage returns to transitional function. The presence of the TR melody in mm. 61-66 confirms this interpretation. The final MC occurs in m. 66 at the end of this zone (Example 2 shows this moment of closure).



cello, bass, bass clarinet, tympani

Example 6b. Einojuhani Rautavaara, Third Symphony, I, mm. 57-62: However, after the flute duet, the dynamic increases to its previous level and the transitional melody returns (with its previous instrumentation). © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

As implemented above, the secondary-parameter network demonstrates its usefulness and applicability for sonata-form analysis of late twentieth-century symphonic repertoire. The secondary-parameter network's power lies in its reliance on elucidating musical changes: as more secondary parameters change, the more likely it is that the music has moved on to a new section. The above analysis reveals that substantial formal consistencies remain in this repertoire from that of tonal sonata form: namely, P, TR, and S all work together to form the exposition of a sonata-form movement. Though this movement by Rautavaara presents a

¹⁷ Hepokoski and Darcy, *Elements of Sonata Theory*, 171.

digestible case study because of its easily definable formal parts, subsequent chapters will present the secondary-parameter network's power to describe movements, in late twentiethcentury symphonic repertoire, that are not always as straightforward. Rautavaara's movement thus presents an important example for the application of the secondary-parameter network. The remainder of this chapter will examine the secondary-parameter network's power to distinguish between recapitulations and codas.

Recapitulatory, Coda, and Closural Problems

The first movement of Rautavaara's Third Symphony includes a recapitulation, but one that appears to be quite short. After the development concludes in m. 166, Rautavaara presents 12 measures of TR materials (mm. 167-178) and 10 measures of P's birdcalls (mm. 179-188). When compared with P's length of 26 measures (including introduction) and the TR's 36 measures, this recapitulation seems quite short—and not to mention S's omission and this raises a variety of questions. Why is this recapitulation so short? How is its small nature sufficient to serve a goal that historically required the repetition of the whole exposition? Is this a result of tonality's disillusion, so that the late twentieth-century recapitulation functions differently than a tonal sonata's recapitulation? And what about a coda, which very often seem to occur at the end of sonata-form movements?

This movement is ideally positioned to elucidate how recapitulations operate in late twentieth-century symphonic repertoire, especially when considered with Rautavaara's comments on the anti-climactic nature of past recapitulations. The exposition's P, TR, and S zones are all fairly easy to decipher without the help of the secondary-parameter network—in other words, the first movement of Rautavaara's Third Symphony demonstrates a familiar sonata form, and the secondary-parameter network confirms this analysis. As such, by retaining a clear expositional structure, this movement sidesteps the significant difficulty of

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excavating sonata form.¹⁸ Its formal properties can be more directly compared with those of a general, tonal, dialogic sonata form. The following section will consider the differences between the recapitulation and coda through the lens of the secondary-parameter network. It will conclude by pondering the relationship between Rautavaara's recapitulation and a generic tonal recapitulation.

RECAPITULATION

To state the obvious, the recapitulation begins after the development ends—Example 7 shows how closures occurs: in the score, a double-bar line all help to define this junction in m. 166, but there are also significant changes to secondary parameters. Closure occurs on E4: the sixteenth-note quintuplets and eighth-note triplets in contrary motion converge on this note. After m. 166's closure, the instrumentation, rhythms, and dynamic change. In addition to retroactively emphasizing this closure, these changes in secondary parameters also establish the recapitulation. The recapitulation begins with the fragmentation of birdcalls, which opened the TR. These correspond to mm. 61-65 and 25-36 in the exposition, respectively.

¹⁸ See, in particular, Chapters 3, 4, and 6 for discussion on detangling more complex sonata forms.



Example 7. Einojuhani Rautavaara, Symphony No. 1, I, mm. 164-174: The so-called retransition features the TR's melody, and the development focuses on the TR's birdcall fragmentation. © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

It is interesting that the TR's fragmentation opens the recapitulation shortly after its melody occurs at the end of the development—in other words, it looks as though the TR's materials overlap between the development and recapitulation, but this is not necessarily the best analysis. The secondary-parameter network identifies the TR's melody (first presented in Example 50 through its rhythmic relationships, the descending contour between long and short notes, instrumentation, and final descending tuple (though the original had a sextuplet while Example 7 has a quintuplet). Instead of establishing the MC, however, as it did in the exposition (Example 5, mm. 42-43), this iteration of the transition's melody establishes the retransition, and the closure that occurs in m. 166 forms a boundary between the development and retransition. While scholars do not make any particular note that retransitions often use transitional material, Hepokoski and Darcy write that retransitional procedures "can recall those that precede the MC in expositions," primarily through the RT's energy-gain.¹⁹ The

¹⁹ Hepokoski and Darcy, *Elements of Sonata Theory*, 197.

development-ending closure occurs in m. 166, and the fragmentation returns in m. 170: the ensuing distance of three and a half measures weakens any connection between them. Furthermore, the violin tremolos dissipate any remaining energy after the m. 166 closure, and their texture reminisces of the exposition. Thus, the distance between the TR melody and fragmentation, in addition to the numerous secondary parameter changes at m. 167, suggest that the proximity of the two parts of the TR is more coincidental: it just happens that the development ends with the transition's theme, and that its fragmentation begins the recapitulation. When taken with his negative comments on the predictability of recapitulations quoted at the beginning of this chapter, his incorporation of the TR's two halves across the retransition and recapitulation becomes a musical pun (incidental or deliberate) on the transition's role to connect two formal functions.

The presence of the birdcalls' fragmentation means that most of the P zone is omitted from the recapitulation. However, the presence of a P-based transition allows the recapitulation to pay its respects to P, even though the initiating formal function is not explicitly included. S's absence is also noteworthy, as the exclusion of these two thematic areas—traditionally so important to sonata form—renders the recapitulation significantly shorter than the exposition.

The absences of P and S show that recapitulations no longer need to include all (or even most) of the expositional materials. Instead, a recapitulation must simply acknowledge some prior (familiar) musical material. The lack of functional tonality frees a sonata-form movement from the normative requirement of a full recapitulation. The late twentieth-century recapitulation is still as important as its functionally tonal predecessor, but its job has now shifted. Instead of ensuring that the functionally tonal sonata concludes in the proper key, more recent recapitulations serve to reminisce about expositional material of past-heard zones. In this case, the recapitulation retains its ending interthematic formal function, though

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a late twentieth-century symphonic recapitulation does not require all three constituent zones, as is still normative of an exposition. In other words, a recapitulation might include P and TR, P and S, or just one of these zones. The exposition and recapitulation, then, both bookend the development, and all three of these formal sections perform equally significant functions in the late-twentieth-century sonata.

The problem of an abbreviated recapitulation is not a new issue for the analysis of late-twentieth-century repertoire. Both Caplin and Hepokoski and Darcy address such occurrences, and I will briefly review their positions before continuing on to discussion of how the secondary-parameter network identifies the junction between recapitulation and coda.

For Caplin, the recapitulation begins with the return of the main theme.²⁰ However, Caplin states that some recapitulations omit parts (or all) of the main theme (and sometimes, also, the whole transition).²¹ Even though such omissions would seem to put the recapitulation function in jeopardy, Caplin believes that the practice of labelling what comes after the development as the recapitulation is so engrained that the this justifies the recapitulation label. Overall, the main goal of a recapitulation is to present any subordinate key materials in the home key, and a recapitulation's omission of the main theme and transition does not problematize this motion.²²

Hepokoski and Darcy allow for some wiggle room with respect to the materials included in a recapitulation, in that the term "suggests a postdevelopmental recycling of all or most of the expositional materials, beginning with the module that had launched the

²⁰ William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998). 161.

²¹ Caplin, Classical Form, 173.

²² Caplin, Classical Form, 173.

exposition."²³ A recapitulation must begin with P materials due to a sonata's rotational nature, and assuming that a recapitulation can begin with transitional or S materials leads to "definitional contradictions" between "recapitulation" and "partial," "incomplete," or "reversed" recapitulation.²⁴ Some recapitulations appear to begin with post-P^{1.1} materials, and these blur sectional and rotational boundaries.²⁵ In summary, most recapitulations must present the bulk of the expositional materials in the same order as they originally occurred. In this regard, their observations for a development are stricter than Caplin's.

That said, Hepokoski and Darcy do allow for "truncated recapitulations" to occur when "the recapitulation is aborted shortly after P or P—TR in the recapitulation, proceeding, usually, into a brief coda."²⁶ The implication of truncation is that the recapitulation never achieves the ESC. Truncated recapitulations can occur in movements of any tempo, though the seem to occur more frequently in slow movements (to the extent that a "rare" event can occur more often).²⁷ The idea of an "anti-recapitulation" seems related to a truncated one in that both avoid achieving the ESC; as a category, anti-recapitulation "encompasses recapitulations that instead of affirming the rotationally generic presentation of thematic materials seem to undermine them at every step."²⁸ Hepokoski and Darcy highlight the truncated recapitulation's inability to achieve the ESC because they cannot enter into the second half of the recapitulation.

²³ Hepokoski and Darcy, *Elements of Sonata Theory*, 231.

²⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 232.

²⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 256.

²⁶ Hepokoski and Darcy, *Elements of Sonata Theory*, 247.

²⁷ Hepokoski and Darcy, *Elements of Sonata Theory*, 249.

²⁸ Hepokoski and Darcy, *Elements of Sonata Theory*, 249.

An opposite problem occurs in the Type 2 sonata, where the second rotation begins with P and TR materials that are treated developmentally and continues with recapitulatory S and C materials.²⁹ In this configuration, the recapitulation cannot be said to begin with S materials because a "fundamental characteristic" of S is that it "never begins a large structural unit."³⁰ In fact, there is no recapitulation, in a strict sense, because P and TR materials are absent. A Type 2 sonata's second rotation will achieve the ESC because S returns in the tonic key. While the preceding analysis established the presence of the recapitulation in the first movement of Rautavaara's First Symphony, the following discussion shows that a moment of closure that is analogous to the ESC remains present at the end of a late-twentieth-century recapitulation, even if the S zone does not recapitulate.

RECAP or CODA?

Codas are frequent additions to sonata form. In a tonal sonata, a coda would usually occur after the presence of P, TR, and S in the recapitulation. However, what if, as in the case of the late-twentieth-century sonata form, the recapitulation is abbreviated through thematic omission, and there is no clear candidate for an ESC because no S zone occurs? How does one know when the recapitulation switches to the coda? Are there other musical indications that a movement might provide to show that the music has moved from recapitulatory function to after-the-end function?

The first movement of Rautavaara's Third Symphony demonstrates how thematic omission and a lack of a clear ESC might be related: in this case, the ESC cannot be in a location analogous to that of the essential expositional closure (EEC) because the recapitulation omits the very zone that marshals this concluding cadence. How could a

²⁹ Hepokoski and Darcy, *Elements of Sonata Theory*, 353-354.

³⁰ Hepokoski and Darcy, *Elements of Sonata Theory*, 354.

recapitulation, such as this, possibly set up the ESC without S? Hepokoski and Darcy write that a "truncated recapitulation" occurs "where the recapitulation is aborted shortly after P or P—TR in the recapitulation, proceeding, usually, into a brief coda."³¹ In other words, the lack of S zone renders the ESC unattainable, which creates "catastrophe" for "the structure as a whole."³² The following discussion applies the secondary-parameter network to determine when and how Rautavaara's recapitulation switches to the coda. Then, I use these findings to elucidate the relationships between recapitulation and coda in a late twentieth-century sonata form, and between late-twentieth century and tonal sonata recapitulations. I argue that, even though there is no S zone present in Rautavaara's recapitulation, the movement still attains the ESC.

SECONDARY-PARAMETER NETWORK

The secondary-parameter network can be applied to mm. 167-188 of the first movement of Rautavaara's Third Symphony to identify where a significant number of secondary parameters change, and this information provides the location of the ESC. Numerous secondary parameters change at moments of closure, and, when more secondary parameters change in a significantly brief amount of time, closure is more likely to occur. Example 8 shows how five (of six) secondary parameters change at m. 179, and Table 2 organizes these changes in a way that reflects their organization in Table 1. The tempo changes to half the speed the previous tempo (and thus returns to the opening tempo). The birdcalls return in the flutes, and the clarinet presents a continuous birdcall; the clarinet's rhythms also change from sixteenth notes to thirty-second sextuplets. The instrumentation also changes, as the horn's P melody returns (with augmented rhythms when compared to the

³¹ Hepokoski and Darcy, Sonata Theory, 247.

³² Hepokoski and Darcy, Sonata Theory, 247-248.

exposition's version) to create a homophonic texture over the strings' tremolo whole-note accompaniment. The harmonic rhythm changes to the one-measure oscillations between two chords, and a *crescendo* from *pianissimo* to *mezzo forte* leads to m. 179. The fact that nearly all secondary parameters change at this downbeat means that the ESC occurs at the beginning of this measure; the double-bar line indicated in the score underscores this structural moment. The preceding material (until the end of m. 178) belongs to the recapitulation, and the following materials constitute the coda.



Example 8. Einojuhani Rautavaara, Symphony No. 1, I, mm. 177-180: A significant number of secondary parameters change at m. 179, including tempo, instrumentation, rhythms, texture, and harmonic rhythm. © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company.

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Recapitulation: mm. 167-178	Coda: mm. 179-end
-instrumentation: brass, violins, clarinet	-instrumentation: horn, flute, clarinet
-tempo: same from development	-tempo: twice as slow as previous tempo
-time signature: 4/4	-time signature: same
-rhythms: whole notes, half notes; sixteenth	-rhythms: whole notes, half notes; thirty-
notes in violin and clarinet	second note sextuplets in clarinet and flute
-texture: chorale + violin/clarinet flourishes	-texture: sparser due to less instrumentation;
-dynamic: <i>pianissimo</i>	homophonic (horn melody and strings'
	accompaniment)
	-dynamic: mezzo forte, decrescendo to
	piano

Table 2. A summary of the secondary-parameter changes at m. 178's ESC.

The fact that this is the moment when TR materials yield to P materials is worth emphasis. In the above reading, based on the secondary-parameter network, the TR material encompasses the recapitulation, and the P-based material presents the coda. This analysis aligns with Hepokoski and Darcy's comments on codas. They believe that P-based codas are so common that the return of P, after the recapitulation, "is a strong sign that the coda has begun."³³ The melodies heard in these two sections thus historically relate to the sonata genre, and this connection helps distinguish between recapitulation and coda. One key difference, though, is that Rautavaara's coda seems more apt to be a conclusion, particularly with the horn's augmented rhythms, while Hepokoski and Darcy believe that codas present the beginning of an extra rotation of the "referential materials."³⁴ For them, codas exist external to sonata-space, so that they reinforce or contradict what occurred in within the sonata.³⁵

Together, the changes of secondary parameters in Rautavaara's recapitulation and coda demonstrate the formal-functional differences between these sections, and how a latetwentieth-century sonata form might fulfill these qualities. Caplin writes that the

³³ Hepokoski and Darcy, *Elements of Sonata Theory*, 283.

³⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 283-284.

³⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 281-284.

recapitulation's functions include "to prove symmetry and balance to the overall form by restating the melodic-motivic material of the exposition." As previously discussed, Rautavaara's recapitulation does so by presenting transitional material. (Why the recapitulatory processes for late twentieth-century sonata-form repertoire are different than their earlier, tonal counterparts will be discussed below.) Per Caplin, the coda possesses a "recessive dynamic, in which the energy accumulated in the motion toward the cadential goal is dissipated."³⁶ The slow, regular harmonic rhythm and the augmented rhythms of the P zone particularly promote this goal. The formal functions of both sections are thus readily audible. The brevity of this movement's recapitulation and Rautavaara's use of only transitional materials also reflects his desire for a more imaginative and less predictable structural unit. Under this guise, his application of transitional materials across the boundary between retransition and recapitulation becomes a musical pun.

The secondary-parameter network's findings differ from those of Caplin and Hepokoski and Darcy. Caplin emphasizes that "the onset of the coda is not often readily perceived" and that "the 'start' of the coda is best located at that moment when the music of the recapitulation no longer corresponds to that of the exposition, even if that moment is not perceived as a structural beginning."³⁷ When a coda is present, the preceding closing section's final codettas are "sometimes altered or eliminated."³⁸ If the exposition concludes with a retransition, the recapitulation will include an analogous module to move to the beginning of the coda. In the analysis presented above, though, the secondary-parameter network identified a clear beginning to the coda through changes of secondary parameters to offer its definitive starting location.

³⁶ Caplin, *Classical Form*, 16.

³⁷ Caplin, *Classical Form*, 181.

³⁸ Caplin, Classical Form, 171.

For Hepokoski and Darcy, the coda begins "once the recapitulation has reached the point at which the exposition's closing materials, normally including the final cadence, have been revisited in full."³⁹ Usually, this means that the coda begins after "the last expositional measure has been retraced in the recapitulation," but there is some flexibility at this juncture.⁴⁰ For example, there might be a "last-minute deviation from strict correspondence with the end of the exposition" or a "transitional passage" might link the recapitulation and coda.⁴¹ The adjusted scope of recapitulations in the late twentieth century throws a wrench, so to speak, into these definitions. If recapitulations are, by default, shorter than an exposition, not all expositional materials need to be present before the coda begins; Rautavaara's recapitulation demonstrates this fact. There is no need to account for any deviation from expositional materials because any differences are baked into late-twentieth-century sonata forms. It is possible that a transitional passage might assist the motion from recapitulation to coda, but this project's findings suggest that a stricter boundary between recapitulation and coda are more common. The next analytical example, the first movement of Liebermann's First Symphony, also demonstrates this tendance.

Liebermann's First Symphony

Lowell Liebermann, a prolific American composer, has several symphonies to his credit, the first of which will be discussed here. The end of the first movement of his First Symphony (1982) presents a second case of an extremely short recapitulation before the ESC occurs. Essentially, this movement's recapitulation only includes P materials before the ESC, but it additionally includes the exposition's closing zone. Similar to Rautavaara's movement

³⁹ Hepokoski and Darcy, *Elements of Sonata Theory*, 281.

⁴⁰ Hepokoski and Darcy, *Elements of Sonata Theory*, 281-282.

⁴¹ Hepokoski and Darcy, *Elements of Sonata Theory*, 282.

discussed above, the recapitulation reaches a concluding ESC even though no S zone is present. The following analysis uses secondary parameters to explore how a short recapitulation fulfills recapitulatory function and to elucidate the recapitulation's switch from P to closing zone. Table 3 presents the secondary-parameter network's findings for the whole movement.

Exposition:	
P: mm. 1-13	 -instrumentation: strings; add winds (starting m. 7) -tempo: Andante (eighth note = 108) -time signature: changes appx. every measure (9/8, 7/8, 6/8); beat always on eight note -rhythms: quarter notes and eighth notes -texture: homophonic; contrapuntal with winds' entrances (starting m. 7) -dynamic: <i>pianissimo</i>, increases to <i>forte</i> (m. 11) and <i>fortissimo</i> (m. 14) -m. 14: post-closure expansion via violin solo
TR: mm. 15-41	-energy-gain: faster rhythms, louder dynamics, greater instrumentation
	 Mm. 15-25: -instrumentation: strings, winds; add brass (m. 22) -tempo: same -time signature: same—changes appx. every measure (9/8, 7/8, 6/8); beat always on eight note -rhythms: quarter and eighth notes; add sixteenth notes (m. 22) -texture: contrapuntal; more lines start in m. 22 -dynamic: <i>piano</i>, changes to <i>fortissimo</i> (m. 22) -MC proposed: m. 25 TMB: mm. 26-41
	 -instrumentation: strings and harp (new); add brass (m. 33) and winds (m. 35) -tempo: same -time signature: same -rhythms: eighth and quarter notes -texture: contrapuntal -dynamic: <i>piano</i> to <i>fortissimo</i> (m. 38) -MC: m. 40, with fill (mm. 40-48: 4/4 time; C-pedal; horn oscillations; piccolo/flute and cello/bass melodies)
S: mm. 51-69	-instrumentation: strings; add flute (m. 55) and trumpet (m. 65) -tempo: quarter note = 72 -time signature: 4/4

	 -rhythms: half and quarter notes -texture: contrapuntal (viola and trumpet) -dynamic: generally <i>piano</i>, but <i>forte</i> (m. 68-69) -EEC: m. 69, beat 3 (post-closure expansion) -Closing zone: mm. 71-81 (flute, harp, strings, violin solo); <i>pianissimo</i>; contrapuntal
Development: mm. 82-125	 -contrapuntal entrances, violin 2/oboes and clarinets ; with violin 1 and viola counterpoint -mm. 86-88: fragmentation (sixteenth-note motive), with trumpet and woodwind interjections; mm. 89-91: reduce of instrumental textures to viola and cello; P and counterpoint -mm. 95-103: faster alternation of instruments (brass, oboes and trumpets, flutes) (note: P-based, and beat on eighth note) -mm. 104-110: horn chorale -m. 111+: faster alternation between instrument groups; instrument groups feature counterpoint (woodwinds, brass, strings) -m. 120: RT (sixteenth-notes in low strings, ascend to include upper strings and woodwinds; louder dynamics (<i>forte</i> and <i>fortissimo</i>); monophonic texture turns into contrapuntal texture (m. 125); time signatures change and include beats on quarter and eighth notes)
Recapitulation: mm. 126-148 (end)	 -instrumentation: full orchestra -tempo: same as preceding -time signature: changes appx. every measure (10/8, 9/8, 6/8); beat always on the eighth note -rhythms: quarter notes and eighth notes -texture: contrapuntal (dense) -dynamic: <i>fff</i> -EEC: m. 131 Closing Zone: mm. 131-148 -instrumentation: celeste; strings' harmonics; flute/piccolo -tempo: same -time signature: 4/4 (consistent) -rhythms: quarter notes, half notes -texture: sparse; contrapuntal flute/piccolo and celeste, over violins' sustained harmonics -dynamic: <i>piano</i>

Table 3. A summary of the secondary-parameter network's findings for the first movement of Lowell Liebermann's First Symphony.

Example 9a shows the end of the RT and beginning of the recapitulation. The vertical

line and diagonal arrow specify when, exactly, the switch of formal functions occurs. After a

relatively quiet exposition and slow-moving development, the RT's energy-gain is quite

striking. Instead of continuing the development's sparse instrumentation and generally slow rhythms, the RT employs faster rhythms (primarily sixteenth notes) with an increasing instrumentation and dynamic level. It is almost as though these few measures seek to make up, so to speak, for all of the movement's previous serenity. The change of section—that is, the beginning of the recapitulation—is marked by full orchestra, a *fortississimo* dynamic level, and a dense contrapuntal texture; and the undulating time signature, always with the beat on the dotted-quarter note, and the use of eighth note and dotted quarter note rhythms mark this as the P zone. Example 9b shows the movement's opening, where P initiates the exposition. While the expositional P is also marked by string instrumentation and homophonic texture, its ever-changing time signature (always with the beat on the eighth note), and its eighth- and quarter-note rhythms distinguish it from a continuation of the RT in the recapitulation. Even though P is the recipient of the RT's energy, the number of secondary parameters that change at m. 126 nonetheless mark it as a new section.



Example 9a. Lowell Liebermann, Symphony No. 1, mm. 123-128: Changes in instrumentation, dynamic, contrapuntal texture, time signature, and rhythms identify the beginning of the recapitulation.



Example 9b. Lowell Liebermann, Symphony No. 1, mm. 1-3: In the exposition, P is marked through its instrumentation, constantly changing time signature, beat on the eighth note, homophonic texture, and use of eighth- and quarter notes.

As a result of the RT's exuberance, P includes a number of high-energy elements: its orchestration, dynamic, and dense contrapuntal texture all lend it an air of excitement. The recapitulation's P-zone additionally includes several tight-knit features that support its identity: it is only six measures in length, and its brevity concisely ushers in a clear candidate for the ESC. Motivic concision and avoidance of development assist with this theme's short

statement—its six measures render it nearly half as long as its initial appearance in the exposition, where it was thirteen measures in length.

Example 10's arrow shows how the P zone reaches a moment of closure in m. 131. Nearly all secondary parameters change at this moment, which, as demonstrated by the substantial changes of secondary parameters that follow this moment of closure, proves to be the ESC. While a TR might usually come next, the changes that occur indicate that this is not what happens. Instead, the changes to secondary parameters dissipate most—if not all—of P's energy after this satisfying closure, and the fact that closing zone materials return after P corroborate m. 131's closure as the ESC. The moment at m. 131 thus fulfills Hepokoski and Darcy's requirements for an ESC as the only "satisfactory" cadence that "proceeds onward to differing material,"⁴² and the energy-dissipation section fulfills the post-closural function of a closing zone.⁴³ The fact that the common closural procedures are not present at this moment of closure does not negate its salience but, rather, reinforces the nature of these procedures as tropes that may or may not be present.



Example 10. Lowell Liebermann, Symphony No. 1, I, mm. 130-132: P concludes with powerful closure at m. 131, after which instrumentation, texture, time signature, and dynamic all change.

Many changes of secondary parameters occur after the downbeat of m. 131, and these serve to establish a new formal function. The instrumentation immediately decreases from

⁴² Hepokoski and Darcy, *Elements of Sonata Theory*, 120.

⁴³ Hepokoski and Darcy, *Elements of Sonata Theory*, 180.

full orchestra to celesta and strings, and Example 11 shows that the texture changes from a thick counterpoint to counterpoint between the celesta and flute, over strings' sustained harmonics. The time signature settles into a steady 4/4 from its consistent shifting with the beat on the eighth note. Examples 10 and 11 also show two different sets of rhythms: P uses quarter notes and eighth notes, while the post-ESC materials rely on half notes and quarter notes (the quarter notes are the same speed on both sides of the moment of closure, as tempo is the only secondary parameter that does not change). Finally, the dynamic level also decreases from *fortississimo* to *piano*. Table 4 summarizes the secondary parameters that change at this point.



Example 11. Lowell Liebermann, Symphony No. 1, I, pickup to m. 133-m. 136: The instrumentation, texture, time signature, rhythms, and dynamic establish a new section.

P: mm. 126-131	Closing Zone: mm. 131-148
-instrumentation: full orchestra	-instrumentation: celeste; strings'
-tempo: same as preceding	harmonics; flute/piccolo
-time signature: changes appx. every	-tempo: same
measure $(10/8, 9/8, 6/8)$; beat always on the	-time signature: 4/4 (consistent)
eighth note	-rhythms: quarter notes, half notes
-rhythms: quarter notes and eighth notes	-texture: sparse; contrapuntal flute/piccolo
-texture: contrapuntal (dense)	and celeste, over violins' sustained
-dynamic: fortississimo	harmonics
-ESC: m. 131	-dynamic: <i>piano</i>

Table 4. A summary of secondary parameters that change at m. 131 to define the ESC.

Additionally, the high number of secondary-parameter changes renders this closure quite powerful and more salient. These qualities are important because they securely plant the moment of closure at this location. In other words, the secondary parameters' changes allow the closing zone to include a high level of energy dissipation after such a rambunctious recapitulation. The recapitulation's closing zone uses regular harmonic rhythm and reduced instrumentation to dissipate P's energy.

As well as establishing the fact that a new formal function begins in m. 131, the secondary-parameter changes just discussed also define closure at the downbeat of this measure. This moment thus fulfills the requirements for the occurrence of closure as laid out in Chapter 1: a significant number of secondary parameters change in a short amount of time, and stepwise motion and rests occur. Example 11 shows that five of six secondary parameters change—which is a very high number of secondary parameters to be adjusted at any time. As mentioned above, the fact that the downbeat of m. 131 serves to dissipate energy helps establish this moment's closure function. M. 131 is also a rare instance where stepwise motion does not occur at a moment of closure, contrary motion from F to C is present in every voice. Even though stepwise motion is not present, the important point here is that the drastic change of instrumentation—from full orchestra to celeste—allows ample space for the new, sparse instrumentation to establish its own secondary parameters.

The return of the closing zone's secondary parameters at m. 131 help facilitate the return of post-closing function and, retrospectively, reassert the ESC's influence. By examining only the last third the movement, the above analysis takes Liebermann's recapitulation out of context. The same secondary parameters that occur in mm. 131-148 are previously present in mm. 71-81. M. 71 presents the first satisfactory moment of closure after the exposition's S materials, so it can be considered the EEC.⁴⁴ Thus, the materials that follow this conclusion constitute the closing zone because they previously occur after the S zone.⁴⁵ Example 12 shows that the exposition's closing zone also has thin instrumentation, a 4/4 time signature, quarter note and half note rhythms, and a sparse contrapuntal texture over

⁴⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 120.

⁴⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 180.

violins' sustained notes; the comparison of its opening with Example 11 shows that it follows Caplin's prescription for the relationship between expositional and recapitulatory closing zones. Though Caplin prefers the term "closing section," he writes that it "usually reappears in the recapitulation in much the same way as it did in the exposition."⁴⁶



Example 12. Lowell Liebermann, Symphony No. 1, I, mm. 71-74: The exposition's closing zone includes thin instrumentation, a 4/4 time signature, quarter note and half note rhythms, and a sparse contrapuntal texture over violins' sustained notes.

Caplin also writes that the closing section typically serves to "dissipate the accumulated energy" from throughout the preceding theme.⁴⁷ In both expositions and recapitulations, a closing zone's secondary parameters provide several clues to the identity of its formal function. The quieter dynamic level, longer rhythmic values, sparse texture, repetition, and slower harmonic rhythm fulfill Caplin's provision of energy-dissipation.⁴⁸ All of these secondary parameters mark it as possessing post-closing function. In the case of Liebermann's symphony, the S zone does not demonstrate exorbitant amounts of energy—instead, it uses a slow tempo and quiet dynamic. The exposition's closing zone dissipates what little energy remains in the S zone through its more regular harmonic rhythm and

⁴⁶ Caplin, *Classical Form*, 171.

⁴⁷ Caplin, *Classical Form*, 122.

⁴⁸ Caplin, *Classical Form*, 16.

reduced instrumentation, and, as discussed above, the recapitulation's closing zone does the same.

Similar to m. 179's role as the recapitulation's concluding moment of closure in the first movement of Rautavaara's Third Symphony, this moment serves as the ESC. Unlike in functionally tonal repertoire,⁴⁹ moments of closure are no longer tied to a specific tonal structure, so that any expositional material can present closure that satisfactorily concludes the recapitulation. This means that, for late twentieth-century repertoire, the absence of any particular expositional theme does not condemn a sonata-form structure to deformational status—rather, in the updated idea of recapitulation, not all expositional formal functions are required for a complete and unproblematic recapitulation.

To summarize the preceding discussion: in the first movement of Liebermann's First Symphony, the retransition's energy-gain leads to a high-energy recapitulation of the P zone, which is followed by the ESC and closing zone. Like the first movement of Rautavaara's Third Symphony, though, this movement omit many expositional materials from its recapitulation. If only P and the closing zone materials are present, then the recapitulation eschews both TR and S. These exclusions are the crux as to why the recapitulation is so short when compared to the exposition. As Table 3 shows, TR and S constitute most of the exposition's duration, spanning mm. 15-69, and the TR takes up most of this space. The TR's length in the exposition originates in another TMB situation: the initially proposed MC occurs in m. 26 is rejected in favor of one in m. 40, which then includes MC-fill and thus delays S's start until the pickup to m. 51. The TR's—not to mention S's—exclusion from the recapitulation causes it significant brevity when compared to the exposition.

⁴⁹ Hepokoski and Darcy, *Elements of Sonata Theory*, 247.

In this light, Liebermann's recapitulation loosely resembles one of Caplin's truncated recapitulations, as he omits most of the expected recapitulation, even though this truncated recapitulation does not reside in his prescribed location. Caplin discusses truncated recapitulations as "the principal deviation in sonata-without-development."⁵⁰ Liebermann's movement, of course, does include a development. Furthermore, even though it can occur in a (fast) first movement, sonata-without-development is a subcategory of slow-movement forms.⁵¹ The tempo of Liebermann's movement is slow, but this movement's status as a first movement is still remarkable.

When taken as a truncated recapitulation, though, Liebermann's recapitulation includes an additional anomaly. Caplin's truncated recapitulations require that, after the P zone occurs, "the rest of the recapitulation (transition, subordinate theme, closing section) is eliminated, but a coda may very well be added."⁵² Liebermann's inclusion of the closing zone violates Caplin's prescription at face value. Caplin describes the closing section in conjunction with the subordinate theme (S zone), stating that "a subordinate theme almost always demands a postcadential passage either to dissipate the accumulated energy or, sometimes, to sustain that energy even further beyond the actual moment of cadential closure."⁵³ Thus, for Caplin, the omission of S would necessitate the absence of the closing zone—but it would also require the absence of the ESC. Because a moment of closure that does act as ESC occurs, it seems more reasonable that the closing zone return, as post-ESC materials, than it does at first glance.

⁵⁰ Caplin, Classical Form, 216.

⁵¹ Caplin, Classical Form, 216.

⁵² Caplin, *Classical Form*, 261.

⁵³ Caplin, Classical Form, 122.

It is interesting to note that P and the closing zone roughly reflect their expositional lengths when they return in the recapitulation: P is six measures, instead of thirteen, and the closing zone is eighteen measures instead of eleven. Both zones are drastically shorter, but by the same amount. The fact that the ESC occurs here, after only the P zone has been recapitulated, again shows that a late-twentieth-century sonata-form recapitulation need not repeat all expositional material. Liebermann's recapitulation shows that late twentiethcentury sonata-form movements need not include all expositional zones.

The movement discussed here presents an intriguing commentary on sonata form. Liebermann has publicly discussed his identification with historical musical influences. For example, he identifies Beethoven as the "most profound influence" on his musical growth during his collegiate years.⁵⁴ In other interviews, Liebermann has also revealed his opinion that classical music "is a continuum and [that] it's enriched by associations from the past."⁵⁵ Thus, viewing his First Symphony's first movement through the lens of sonata form via the secondary-parameter network reveals the important historical connection of its form: understanding this first movement through a sonata-form structure can provide definition and meaning for listeners and performers as they execute their respective tasks.

Conclusion

Through two examples, the preceding chapter argued that secondary parameters identify the recapitulation through the return of previously heard set of parameters from the exposition. In this way, secondary parameters detect expositional and recapitulatory interthematic formal functions in the same way. The two examples discussed above also

⁵⁴ Lowell Liebermann, "Lowell Liebermann's Personal Demons," interview by Patrick Jovell, *Piano Street Magazine*, April 1, 2021, <u>https://www.pianostreet.com/blog/articles/lowell-liebermanns-personal-demons-11052/</u>.

⁵⁵ Lowell Liebermann, "Composer Lowell Liebermann," interview by Bruce Duffie, 1998, <u>http://www.bruceduffie.com/liebermann2.html</u>.

argue for the prevalence of shorter recapitulations in late-twentieth-century symphonic repertoire. On recapitulations, Caplin states, "The recapitulation functions to resolve the principal tonal and melodic processes left incomplete in earlier sections and to provide the symmetry and balance to the overall form by restating the melodic-motivic material of the exposition."56 A late-twentieth-century sonata form is not held to complete any specific tonal process, so melodic processes would seem to be more definitive. If a composer has allowed sufficient developmental space for each zone in the exposition and development so that its melodic processes are complete, then a full recapitulation would not be necessary—and it might even be boringly redundant and insult its audiences. As such, a recapitulation for a sonata-based movement that does not have its roots in functional tonality must only fulfill one criterion: to reminisce of something that came before. In short, because composers in the late twentieth-century do not need to engage with functional tonality, full recapitulations are no longer necessary when these sonata-form movements lack a tonal conflict that requires resolution. The brief recapitulations discussed here go beyond those examined by Damien Blättler, in which the "first theme is a site of structural resolution" because the whole movements employ "alternative processes that run independently of sonata-form logic."57 Now, the inclusion of any expositional materials justifies recapitulatory function, regardless of any other formal or structural processes that might occur.

This chapter also argued that changes to secondary parameters also detect the formal junction between the recapitulation and coda, if the latter is present. A coda's overall task is to dissipate any remaining energy—a trait which remains consistent with a coda's role in earlier sonata-form movements. Closing zones, whether present at the end of an exposition or

⁵⁶ Caplin, Classical Form, 161.

⁵⁷ Damien Blättler, "Radically Inconspicuous Absence: Truncated Sonata Forms in Interwar Paris," *Music Theory Spectrum* 46, no. 1 (Spring 2024): 110.

recapitulation, maintain a similar function in that they also disperse accumulated energy. In addition to discerning expositional and recapitulatory interthematic formal functions, then, examining secondary parameters through the secondary-parameter network can also help analysts identify functions with energy loss. In presenting the analyses of the first movements of Rautavaara's Third Symphony and Liebermann First Symphony, this chapter seeks to have shown the powerful potential of the secondary -parameter network as an analytical tool. The next chapter will build on this argument by examining an exposition whose boundaries between interthematic formal functions are not as obvious.

Chapter 3: Expositional Secondary Parameters (II) and Permeable Boundaries in Yun's First Symphony

Unlike the first movement of Rautavaara's Third Symphony, the first movement of Isang Yun's First Symphony (1983) cannot be easily parsed into well-defined sonata-form sections. Yun (1917-1995) was a Korean composer who studied in Europe and was influenced equally by both Eastern and Western culture and music; he views himself as "exactly in the middle" of Asian and European cultures and does not feel that his music has more qualities of one culture over the other.¹ Indeed, Yun's movement frequently features many instruments sounding together, each of which plays its own rhythmic/melodic stream to result in aggregate sounds that "challenge[] the traditional notions of harmonic analysis, chord and non-chord tones, counterpoint, etc." and thus presents a stratified texture.² As I listen to the movement, I find it difficult to decide what to listen to, let alone how to construe phrases and sections into a coherent musical form. Viewing this movement through the secondary-parameter network, however, clarifies its underlying sonata-form structure. This chapter narrates how powerful the use of secondary parameters can be for the analysis of sonata form when interthematic formal functions are not clear-cut: it argues that secondary parameters can detect such covert organization, even when consecutive themes and sections overlap.

This chapter has two main tasks. It first argues that secondary parameters distinguish each interthematic formal function in the first movement of Yun's First Symphony to reinforce Chapter 2's argument. I show that secondary parameters change at structural points in the exposition, such as when the P zone yields to TR, so that a new set of secondary

¹ Isang Yun, "Where is music going today...", interviewed by Bruce Duffie, Sonus 28, no. 2 (Spring 2008): 46.

² John Covach, "Textural Stratification," in "Report on the 2008 Mannes Institute for Advanced Studies in Music Theory: Jazz Meets Pop," *Music Theory Online* 14, no. 3 (September 2008): 30-34.

parameters defines each theme zone—not a harmonic area or the theme itself. In other words, secondary parameters define this movement's structure.

The second part of this chapter complicates the preceding analysis introducing a concept that I call "permeable boundaries" to acknowledge messy formal boundaries Yun's movement. Understanding this movement's form through secondary parameters is a necessary first step to accessing permeable boundaries, which are, in turn, vital to achieving a fuller picture of Yun's identity. I argue that that consecutive themes and sections can overlap when a subsequent function's secondary parameters begin before the present function's secondary parameters have exited. Permeable boundaries relate to Janet Schmalfeldt's becoming, Carissa Reddick's "functional overlap," and Reddick's and Charity Lofthouse's rotational overlap. As I demonstrate below, Yun's movement provides several instances of this phenomenon, rendering it an ideal introduction to the subject. The repeated presence of permeable boundaries in late-twentieth-century repertoire, while still (intentionally or not) depending on sonata form to give an overall coherence to a movement. This chapter concludes by considering the relationships between the secondary-parameter network and permeable boundaries to discuss their analytical relationships.

Exposition

Table 1 presents the secondary parameters of the whole movement, even though this chapter primarily discusses those of the exposition. Overall, Yun's exposition includes all requisite components of an exposition: P, TR, MC, S, and EEC. Secondary parameters are instrumental in determining where each zone concludes and the next begins, even as Yun's dense musical style makes it difficult to determine what, exactly, to identify as each theme zone and their boundaries overlap. The following analysis discusses the foundational

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secondary parameters for each zone before detangling their boundaries' interactions. As in the previous analysis on the opening movement of Einojuhani Rautavaara's First Symphony, a unique combination of secondary parameters defines each interthematic formal function in the exposition of Yun's First Symphony, and the transition includes energy-gain through its secondary parameters and use of developmental techniques. I will discuss the P and S zones, and the transition, before briefly examining the exposition's moments of closure.

Exposition	
P: mm. 1-27	-instrumentation: horns
	-tempo: quarter note = 76
	-time signature: 6/4
	-rhythms: slow, gradually quicken
	-texture: monophonic turns into polyphonic
	-dynamic: varies
TR: mm. 18-47	-energy-gain: faster rhythms, tempo change, denser textures and larger instrumentation; contrapuntal independence of each instrument group
	-instrumentation: strings, percussion, brass
	-tempo: faster, quarter note ca. 68
	-time signature: same
	-rhythms: faster (thirty-second note sextuplets, sixteenth notes)
	-texture: denser
	-dynamic: fortissimo/fortississimo
	-MC: m. 39; caesura-fill, mm. 40-47 (permeable boundary)
S: mm. 44-55	-instrumentation: violins' melody string accompaniment -tempo: (same)
	-time signature: 4/4 -rhythms: quarter notes, eighth notes in melody; thirty-second
	tortura: homonhonia? But dance accompaniment
	-dynamic:
	-FFC: m 55 (closure in most instruments)
	ELC. III. 55 (closure in most instruments)
Development: mm. 56-108	-woodwind interlude 1: mm. 56-64, flute/piccolo; orchestra joins m. 65
	-woodwind interlude 2, oboes, and flute/piccolo: mm. 69-76; orchestra joins m. 77
	Both interludes feature chamber-like settings (featuring solo
	instruments), and orchestral returns feature extremely dense
	textures
	-unrelenting density
	-m. 89: fragmentation, all instrumental groups are active; restart

	 -m. 93: strings and woodwinds; more fragmentation; brass more fragmented when they return -m. 105: fragmentation in all instrument groups (woodwinds, brass, and strings)=RT
Recapitulation: mm. 105-155 or 160	 -m. 109: P clear (dynamics, brass featured, fewer instrument groups) -TR: starts m. 117: woodwinds and strings (no brass), percussion -mm. 129-148: MC-fill -m. 149: S (permeable boundary with MC-fill)
Coda: starts m. 155 or m. 160?	

Table 1. The defining secondary parameters of the first movement of Yun's First Symphony.

Examples 1a and 1b shows that Yun's P zone possesses a specific combination of tempo, instrumentation, dynamic fluctuation, rhythmic development, and progression from less to more contrapuntally complex. The aggregate of these secondary parameters defines the P theme zone. The zone opens with the horns playing a Bb, and the whole zone consists of this instrumentation. As is evidenced on the first note, dynamic fluctuation also plays a significant role in defining this Yun's P zone. The tempo (quarter note = 76) is also consistent throughout this excerpt. Though the P zone commences with long notes (tied whole and half notes), it quickly moves to faster note values—quarter notes (m. 5), sixteenth notes (m. 8), and sixteenth-note triplets (mm. 15-16). Simultaneously, Yun breaks the unisons into a duet (m. 8), the duet into a quartet (m. 8) and then sextet (m. 14, not shown). Even though the gradual accumulation of lines might be typical of a slow introduction, this cannot be a slow introduction because it occurs at a faster tempo than the next interthematic formal function. The P zone demonstrates a certain concision of process through its systematic rhythmic and contrapuntal complications that suggest a tight-knit structure. Its conclusion with a clear moment of closure (discussed in conjunction with Example 4) further supports this assessment.



Example 1a. Isang Yun, Symphony No. 1, I, mm. 1-5: Yun's P theme zone only includes horns, with extreme dynamic fluctuation.

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Example 1b. Isang Yun, Symphony No. 1, I, mm. 10-13: Yun's P theme zone is also marked by rhythmic development and increasingly complex counterpoint.

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The P zone's opening (particularly Example 1a) reflects the importance of Yun's Korean heritage for his musical language in two key, but related, ways. First, it demonstrates several qualities of Korean court music which Yun continually employed throughout this career: the 6/4 meter, slow tempo, lack of pulse, and sustained notes and their ornamentation are all musical features that distinguish *Jeong-Ak* (which Jung translates as "right/correct music") from *Minsuk-Ak* (folk music).³

Second, the opening of Yun's First Symphony exemplifies his *Hauptton* technique, which is based on the Korean court music tradition. In this music, long notes have no harmonic or thematic implications, but, rather, their ornamentation (*Sigimsae*) are more important.⁴ Any sustained notes are subject to ornamentation, including trills, glissandi, and

³ Taeyeong Jung, "An Exploration of *Sigimsae* and the Technique of the Korean Instrument *Piri* Used in Isang Yun's *Riul* for Clarinet and Piano" (DMA document, University of Nebraska, 2023), 17-19.

⁴ Jung, "An Exploration," 19.

tremolos.⁵ Yun builds on this tradition by using ornamentation, such as a "spectrum of glissandos, grace notes, trills, vibrate, quarter, or microtonal inflections of vacillations and timbral changes," to "extend out [the ornamented notes] over larger expanses of time, resulting in extended residual sonic complexes in the different instrumental groups or mixtures emerging from these sounds, thereby providing a means of organization."⁶ In the strict *Hauptton* technique, the sustained notes take turns moving, so that only one pitch changes at a time, and other musical parameters (such as dynamics) change when all *Hauptton* are stationary; Yun used the term "*Hauptklang*" for this technique with larger ensembles.⁷

In addition to Korean musical values, Eastern philosophy is also vital to Yun's *Hauptton* technique. This musical style emerged from the Taoist elements Yin and Yang. Andrew McCredie writes: "The East Asian music philosophy and aesthetics associated with Taoism and fundamental to the compositional principles and practices of Yun emphasized the role of the individual tone, or principal tone, as opposed to a series of fixed pitches in a preordained melodic, harmonic, or serial relationship as in Western music. The pitch and location of the individual tone was not fixed but approximate, the tone itself having variable characteristics."⁸ A Taoist perspective allowed Yun to "view[] each note as a microcosm that can be enlarged into a macrocosm, which in turn can be one of many microcosms within an even greater macrocosm."⁹ Thus, ornamentation served to prolong and elaborate the principal note (*Hauptton*), through which a composition received its overall structure.

⁵ Jung, "An Exploration," 19.

⁶ Andrew McCredie, "Isang Yun (1917-1995)," in *Music of the Twentieth-Century Avant-Garde: A Biocritical Sourcebook*, ed. Larry Sitsky (Westport, CT: Greenwood Press, 2002), 589.

⁷ Jung, "An Exploration," 24-25.

⁸ McCredie, "Isang Yun," 589.

⁹ Jung, "An Exploration," 17.

Furthermore, the inner life of each *Hauptton* provides a way into the materiality of each note. Rao writes that "materiality" concerns "the object and material through which sound is produced," and that it "animates the inherent vitality of sound, or what I will call its 'thingness.' By this term I bring attention to a *vital* quality—a liveliness and a livingness— that can be released, given shape, and used expressively."¹⁰ Music's materiality relates to its livingness, and Eastern composers often draw on this in their compositions.¹¹ The sustained notes of Yun's *Hauptton* technique, then, are alive in a way that music composed only under Western influence is not.

The S zone, in contrast, does not display as much evidence of the *Hauptton* technique. S-zone materials begin in m. 44, with a new accompanimental pattern of ascending thirtysecond notes, creating a permeable boundary with the MC-fill.¹² Example 2a shows that this begins with the woodwinds' accompaniment, and the strings begin with the pickup to m. 45. Before the S zone begins, however, the theme itself needs some time to wind up, so to speak, and some pre-S materials present themselves simultaneously with the woodwinds' accompaniment. (A wind-up to the S materials also occurs in the first movement of Rautavaara's Third Symphony and, although it appears to be an available option to late twentieth-century composers, it does not appear to have any structural ramifications besides delaying the start of the official S theme zone.)

¹⁰ Nancy Yunhwa Rao, "Materiality of Sonic Imagery: On Analysis of Contemporary Chinese Compositions," *Music Theory Spectrum* 45, no. 1 (Spring 2023): 152, 153.

¹¹ Rao, "Materiality of Sonic Imagery": 153.

¹² This phenomenon will be discussed in greater detail in the second half of the chapter. For now, it will suffice to say that a permeable boundary occurs when materials from two different sections or theme areas overlap. In this case, it is interesting that the official S theme begins only after the MC-fill material stops and the permeable boundary concludes.





fff cello, bass





Example 2a. Isang Yun, Symphony No. 1, I, mm. 44-48: The woodwinds' new accompaniment pattern and S's wind-up constitute caesura-fill while also beginning S's materials.

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Example 2b shows that the proper S theme begins in m. 48 and features the strings. Overall, S manifests itself as a soaring melody in the upper strings with dense accompaniment by the woodwinds, percussion, and low strings. This is also the first time that Yun presents what might be traditionally defined as a "melody," and, as such, it includes rhythms of comfortable length that are more apt to occur in a melody (rather than fasterpaced filigree, as has generally been heard up to this point in the music): quarter notes, half notes, and dotted quarter notes. The S zone's official start is also marked by a change of time signature (6/4 to 4/4 at m. 48) and its loud dynamic (fortissississimo for the strings and some woodwinds). Though the time signature occurs after S materials begin, it especially serves to distinguish the beginning of the proper S zone for this reason. Thus, the S zone can be identified by a change of accompaniment, new instrumentation, new rhythms, new time signature, and new dynamic. For one belonging to an S zone, the theme presented in Example 2b tends towards tight-knitedness: it has motivic consistency with its reliance on ascending pairs eighth notes (these are cirled in the example; the latter of which are sometimes tied to a quarter note), and the rests in m. 51 show that this excerpt accepts its moment of closure because the strings and winds yield to other instrument groups.



Example 2b. Isang Yun, Symphony No. 1, I, the pickup to m. 48 - m. 51: Yun's S theme features strings, with dense accompaniment and change of time signature.

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Yun's transition begins in the pickup to m. 29, with a slower tempo and louder dynamic (the episode in mm. 18-22 is an instance of a permeable boundary and will be discussed below). Example 3a shows its incipit, which features new instruments (strings, accompanied by percussion), with faster rhythmic values. Its slower tempo allows faster rhythmic values and these, with louder dynamics, serve to increase its energy, as requisite by Sonata Theory.¹³ The quick alternation between percussion and strings in mm. 28-29 is also noteworthy, as this is a common developmental technique in late twentieth-century symphonic repertoire (this technique, among others, is discussed in this dissertation's

¹³ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations of Deformations in the Late-Eighteenth Century Sonata* (Oxford: Oxford University Press, 2006), 93.

Chapters Four and Five). Its presence here marks the transition's formal function as looser than that of P, in accordance with Caplin's stance on transitions.¹⁴



Example 3a. Isang Yun, Symphony No. 1, I, mm. 28-30: The TR includes a slower tempo, louder dynamic, new instrumentation, faster rhythms, and quick alternation between percussion and strings. © Copyright 1983 by Bote & Bock GMBH & CO., Berlin Reproduced by permission of Boosey & Hawkes company.

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Example 3b shows the TR at its peak complexity, in mm. 37-40. The instrumentation includes woodwinds, brass and percussion, and strings, and there are up to six textural strands present: woodwinds; horns and trombones; trumpets; low strings; upper strings; and percussion. This moment's extreme density shows that it is still part of the transition, and its intensification prepares for the medial caesura (MC). In lieu of the usual tonal methods of preparing the MC, such as a dominant lock and raised scale degree 4, such intensification is the only way that the TR can prepare for the MC so that it all the more starkly contrasts with the ensuing pause, given by the break in the score.

¹⁴ William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press), 17.







Example 3b. Isang Yun, Symphony No. 1, I, mm. 37-39: The TR, at is most complex, includes up to six different textural strands, loud dynamics, use of most of the orchestra, and complex counterpoint. © Copyright 1983 by Bote & Bock GMBH & CO., Berlin Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

Moments of Closure

I want to briefly discuss moments of closure here to elicit an overarching trend in the first movement of Yun's First Symphony: throughout the exposition, markers of closure progressively decrease in length. Under analyses by the secondary-parameter network, closure (or formal junctures that occur in a moment) is primarily defined through significant

changes of secondary parameters in a relatively short amount of time. As will be discussed below, Yun's compositional style frequently thwarts this definition through permeable boundaries, but each of his three theme areas concludes with the alignment of all voices. Instead, rhythmic alignment becomes an alternative strategy of closure, no matter how fleeting the alignment might be.

Example 4 shows the first of two moments of closure in the P zone. After the sixvoice counterpoint that is unique to it, the unexpected unison whole note is striking. The horns' sudden rhythmic alignment reinforces this moment of closure, and its length reinforces its presence and significance. Most horns, including the top voice, approach the long note by step, and the whole notes' lengths allow the strings (a new instrument) to bring a new set of rhythms and usher in a new section (the TR). The motion from a discordant harmony built on C, C \ddagger , Eb, G, and A to a more concordant one of simultaneous Bb-major and G-minor triads. This moment will be revisited in discussion on permeable boundaries below, but recognizing the closure that occurs in m. 18 is of paramount importance to the later discussion.



Example 4. Isang Yun, Symphony No. 1, I, mm. 16-18: P concludes with closure that is defined by stepwise motion that precedes a long note in the top horn voice, and motion from a more discordant to a more concordant harmony.

© Copyright 1983 by Bote & Bock GMBH & CO., Berlin Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin The MC occurs at the end of m. 39 in Example 3b, and Example 5 shows that caesura-fill occurs in mm. 40-48. (When pitch clusters are present, Example 5 presents 1 note for simplicity. Pitched percussion's rhythms omit pitches, again for ease of reading the example.) In this case, alignment signifies the medial caesura, rather than the usual changes in secondary parameters. The woodwinds and strings rhythmically align four sixteenth notes at the approach to this moment, as these are the first sixteenth notes of the piece that occur in tandem. The rhythmic alignment reflects that of P's closure, even though this is much more fleeting. Yun writes a caesura into the score (included in Example 3b), and some performances include a break here, which corresponds to the general pause (GP).¹⁵

Example 5 shows that the MC-fill prolongs the MC in mm. 40-47 with several of the same secondary parameters present in the preceding TR. The loud dynamic and complex contrapuntal strands, which are two important elements of energy-gain, carry over into the MC-fill. While the presence of the horns hearkens back to P, the new accompaniment and instrumentation (brass and percussion) indicate that this section does not belong to the P zone because these instruments were not part of the P zone's defining secondary parameters. (This section's distance from the P zone also indicates that it is not part of P). Furthermore, as Example 2b showed, mm. 40-43 also do not define S, which the secondary-parameter network defines through its 4/4 time signature, violin melody, and consistently loud dynamic. This excerpt retains the high-energy effect of the preceding TR, especially with the percussion accompaniment, even though the MC has already occurred.

¹⁵ Isang Yun, *Symphony No. 1*, Seoul Philharmonic Orchestra, conducted by Chi-Yong Chung, recorded April 17, 2001, <u>https://youtu.be/9Mi6Lg3sK6Q</u>. Other performances do not make too much of this half-caesura, as it is second to occur. The Concertgebouworkest recording (Isang Yun, *Symphony No. 1*, Concertgebouworkest, conducted by Reinhard Peters, recorded 1984, <u>https://youtu.be/PxHSC9lx0yc</u>) does so, instead emphasizing the first half-caesura between mm. 30-31. To my ear, this latter interpretation breaks up the TR, obscures its formal function, and disrupts the energy-gain set forth in Yun's score.



Example 5. Isang Yun, Symphony No. 1, I, mm. 40-43: Caesura-fill occurs in mm. 40-43. Example 5 presents only 1 note when pitch clusters are present, and omits pitched percussions' notes, for simplicity. © Copyright 1983 by Bote & Bock GMBH & CO., Berlin Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

Example 6 shows that S's conclusion presents the essential expositional closure

(EEC) in m. 55 as expected, though it is quite fleeting because it consists of only one sixteenth note. After this moment, a significant number of secondary parameters change: the instrumentation thins to a trio of piccolo, flute, and tympani, so that the texture reduces from a dense mass to a trio where all instruments are audible. The dynamic quiets from its previous *fortissississimo* and returns to severe fluctuations between *pianissimo* and *fortissimo*.

Together, these changes signal the beginning of the development.



Example 6. Isang Yun, Symphony No. 1, I, mm. 55-57: The EEC is quite fleeting, consisting only of a sixteenth note. After the EEC, the instrumentation, texture, and dynamics change to signal the beginning of the development.

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The moment of the EEC reveals a trajectory of moments of closures' diminishing size. If P's closure is articulated by one sixteenth note and a whole note (or two and a half), and the MC's closing function is expressed by four sixteenth notes, then a single sixteenth note articulates the EEC—in other words, the moment of closure that has been historically most important is articulated in one of the shortest rhythmic durations. The EEC's brevity closes off the exposition for the ensuing development, regardless of its size.

As demonstrated above, the first movement of Yun's First Symphony presents an exposition with P, TR, and S zones in the first movement of his First Symphony. This exposition also includes MC and EEC, so that it closely aligns with the trajectory of a sonata-form movement as prescribed by Hepokoski and Darcy. Next, I will move to discussion of what I call "permeable boundaries." After defining the term, the remainder of this chapter will discuss four instances of permeable boundaries, two of which occur in excerpts that have not been discussed above.

Permeable Boundaries

The first movement of Yun's First Symphony includes several instances of what I call "permeable boundaries," a phenomenon which has yet to be discussed in music theory scholarship, even though scholars such as Charity Lofthouse, Carissa Reddick, Janet Schmalfeldt, and Peter H. Smith have taken various stances on this issue.¹⁶ "Permeable boundaries" occur when thematic or sectional boundaries are porous, so that the next section begins before the previous section has fully concluded. It is akin to phrase overlap in tonal music, where a previous phrase's cadential resolution also serves as the beginning of a new phrase. The difference lies in that permeable boundaries possess lengthier overlap. The first movement of Yun's First Symphony allows the definition of permeable boundaries because of the stark differences of each interthematic formal function's secondary parameters and the clarity with which junctures occur. As the following analysis will make clear, the presence of numerous permeable boundaries in this movement demonstrates how the blurred boundaries might obfuscate an underlying sonata-form structure—further supporting the argument of sonata form's continued influence over composers, regardless of their awareness.

Two types of permeable boundaries exist based on the type of overlap that occurs: alternating and simultaneous. Alternating permeable boundaries occur when the musical

¹⁶ Charity Lofthouse, "Rotational Form and Sonata-Type Hybridity in the First Movement of Shostakovich's Fourth Symphony" (PhD diss, City University of New York, 2014); Carissa Reddick, "*Becoming* at a Deeper Level: Divisional Overlap in Sonata Forms of the Late Nineteenth Century," *MTO* 16, no. 2 (June 2010); Carissa Reddick, "Formal Fusion and Rotational Overlap in Sonata Forms from the Chamber Music of Brahms, Dvořák, Franck, and Grieg" (PhD diss, University of Connecticut, 2009); Janet Schmalfeldt, *In the Process of Becoming: Analytic and Philosophical Perspectives on Form in Early Nineteenth-Century Music* (New York: Oxford University Press, 2011); and Peter H. Smith, *Expressive Forms in Brahms's Instrumental Music: Structure and Meaning in His* Werther *Quartet* (Bloomington: Indiana University Press, 2005).

Damien Blättler observes this phenomenon in the first movement of Ravel's Violin Sonata between the end of the exposition and beginning of the development. Of his juncture, he writes, "The boundary between exposition and development is blurred. On the one hand, the return of the primary-theme head motive in diatonic profile at m. 97 suggests the beginning of the development, and this material is developed from m. 108. On the other hand, the accompaniment of the exposition's closing material (the faux-organum, octatonic accompaniment of perfect intervals moving by minor third) continues through m. 111," at which time the macroharmonies dissolve into octatonicism to play out the diatonic/octatonic "collectional conflict" that defines this movement's sonata-form process (Damien Blättler, "Radically Inconspicuous Absence: Truncated Sonata Forms in Interwar Paris," *Music Theory Spectrum* 46, no. 1 (Spring 2024): 118).

materials switch between preceding and subsequent sections, creating an overall ABAB form, where the permeable boundary consists of the inner B and A materials. Simultaneous permeable boundaries occur when materials from both sections can be heard at the same time. It is similar to phrase overlap in some ways, but it does not require immediate closure to occur—just the existence of two independent sections of music, that overlap, is enough. Alternating and simultaneous permeable boundaries are similar to Stravinsky's compositional processes of juxtaposition and stratification in some ways.¹⁷

Regardless of if a permeable boundary is simultaneous or alternating, there are three stages. The first, initial stage occurs when only one formal function is present. The second stage possesses the overlap, where two sections both occur. I use the term "overlap" to apply to the space where both themes exist for both alternating and simultaneous permeable boundaries. Formal functions clash in this stage. Finally, the third stage occurs with the absence of the first formal function, so that only the second function is present. Throughout this process, the secondary-parameter network is not disturbed because the two themes (or theme zones or sections) that are involved are independent and retain their identities—in other words, the secondary-parameter network isolates the identifying secondary parameters for each formal entity to specify when and how their overlap occurs.

Permeable boundaries serve to obscure the formal structure without its obliteration and can occur at a variety of structural levels. In other words, they can exist between theme zones (P and TR, for example) or sections (development and recapitulation) within a sonata form. When analyzing permeable boundaries, I use a slash to designate this relationship between two entities (P/TR), for example. When giving measure numbers, I include the permeable boundary's overlap in both sections to show that overlap occurs.

¹⁷ Edward T. Cone, "Stravinsky: The Progress of a Method," in *Perspectives on Schoenberg and Stravinsky*, ed. Benjamin Boretz and Edward T. Cone (New York: Norton, 1972): 156.

Each excerpt explored below demonstrates at least one property of permeable boundaries: their alternating or simultaneous nature; their ability to link theme zones or sections; and the relationship between permeable boundaries and becoming. Specifically, the opening P/TR permeable boundary and the MC-fill/pre-S permeable boundary represent, respectively, the alternating and simultaneous types. The RT/P permeable boundary shows that the permeable boundary can connect sections, as well as theme zones. Finally, Yun's move between S and the Coda raises increasing numbers of questions about the relationship between permeable boundaries, Schmalfeldt's notion of becoming, and Reddick's functional overlap. Rather than address and answer all the questions raised by this final excerpt, this chapter will explore a few most prominent questions. It will conclude by considering the status of permeable boundaries within the overall sonata form.

Permeable boundaries complement several existing classifications of cluttered formal boundaries. I will briefly explore Schmalfeldt's becoming, Reddick's "functional overlap," and Lofthouse's and Reddick's conceptions of rotational overlap before exploring their theoretical interactions with permeable boundaries and delving into four case studies from the first movement of Yun's First Symphony. Essentially, when taken together, these methods present four different ways to examine ambiguous formal boundaries for various repertoires, and each perspective emphasizes different analytical values. The permeable boundaries approach allows scholars to investigate a broader array of repertoire, and their allowance for the retention of moments of closure is a key component to their identity.

Schmalfeldt's becoming describes how formal junctures in Romantic music can omit cadences.¹⁸ Becoming "unite[s] a concept and its opposite" to yield a "synthesis" "in which the original concept and its opposite are no longer fixed or separate, but rather identical."¹⁹

¹⁸ Schmalfeldt, In the Process of Becoming.

¹⁹ Schmalfeldt, *In the Process of Becoming*, 10.

Schmalfeldt presents the opening of the first movement of Beethoven's "Tempest" Sonata, Op. 31, No. 2, as an example.²⁰ The slowly arpeggiated chord (on a first-inversion triad) sounds like a slow introduction, but, upon hearing no cadence before the subsequent fast music, the listener eventually realizes that all the music until m. 21 (the first cadence) is part of the main theme. Schmalfeldt analyzes this passage as Introduction \Rightarrow MT. Essentially, the lack of a cadence allows two phrases, which would otherwise be distinct, to meld into a single entity.

Reddick's "functional overlap" explores how multiple formal functions occur as becoming happens.²¹ Functional overlap relates to Schmalfeldt's becoming in that it "occurs when the function of a given segment extends into a neighboring segment."²² As employed in her discussions of Haydn's String Quartet in B Minor, H. III:37 and Brahms's Piano Quintet in F Minor, Op. 34, I, Reddick demonstrates the relationship between becoming and functional overlap: functional overlap is a result of a becoming. In other words, becoming concerns the synthesis of a function and its opposite and is rooted in the musical events, while functional overlap occurs when a listener recognizes two simultaneous interpretations based on the musical characteristics she hears and how she interprets their position in the overall musical structure. Reddick states that, "In the mind of the listener, with the entrance of the subordinate theme, the second segment *becomes* the transition, and the first segment *becomes* the primary theme. Because they retain their introductory and primary theme rhetoric, however, both segments exhibit functional overlap; the first overlaps introduction with primary theme function, the second overlaps primary theme with transition function."²³

²⁰ Schmalfeldt, In the Process of Becoming, 37-51.

²¹ Reddick, "Becoming at a Deeper Level."

²² Reddick, "*Becoming* at a Deeper Level": 2.

²³ Reddick, "Becoming at a Deeper Level": 5.

Functional overlap, then, is a byproduct of becoming, and acknowledging their relationship lends more nuance to the interaction between the musical entities involved in the becoming.

Charity Lofthouse presents a twentieth-century analogue to the study of functional overlap in her study of Shostakovich's symphonic repertoire.²⁴ She observes that several of his "particular blurring techniques result[] in the expressive mismatching of rotational and tonal/cadential boundary events." Essentially, these occur when Shostakovich juxtaposes the end of a previous rotation with the beginning of a new one.²⁵ In some cases, this process has implications for the ESC or EEC, in which S's motives may continue after the EEC (as in the Fifth Symphony's first movement) or the postponement of tonal closure to the coda (which, again, occurs in the first movement of the Fifth Symphony).²⁶ Overlap can occur at multiple structural levels: in the recapitulation of Shostakovich's Fifth Symphony, the S theme blurs its own boundaries through overlap of two different elements in the second rotation.²⁷ Lofthouse's analyses thus show how a rotational view of formal construction can permeate at multiple structural levels.

Reddick, however, restricts rotational overlap to an interthematic level, such as between the RT and recapitulation.²⁸ She argues that this instance "injects developmental function" into the recapitulation, so that any "correspondence with the exposition may become difficult to detect, or cease entirely."²⁹ Rotational overlap can then be a

²⁴ Lofthouse, "Rotational Form and Sonata-Type Hybridity," 58.

²⁵ Lofthouse, "Rotational Form and Sonata-Type Hybridity," 58.

²⁶ Lofthouse, "Rotational Form and Sonata-Type Hybridity," 59-60, 98.

²⁷ Lofthouse, "Rotational Form and Sonata-Type Hybridity," 113.

²⁸ Reddick, "Formal Fusion and Rotational Overlap," 100-101.

²⁹ Reddick, "Formal Fusion and Rotational Overlap," 101.

compositional strategy for composers to avoid literal recapitulations—an issue that was of increasing concern to composers after Beethoven.

Reddick also identifies formal fusion, which she, following Caplin, defines as occurring when "a single passage of music fulfills more than one function simultaneously."³⁰ Reddick is interested in themes where one interthematic function inflects another theme, thereby creating an internal hierarchy between the two functions. This might occur when a theme is in a small ternary form. The P theme of Grieg's Sonata for Violin and Piano, Op. 8, for example, is a tripartite form where the B section "includes transitional rhetoric" (in this case, a descending thirds sequence that leads to a half cadence).³¹ The presence of transitional rhetoric infuses the P theme with a TR flavor, so to speak, which Reddick annotates as "TR \rightarrow P."³²

The above analytical perspectives apply to limited repertoire: Schmalfeldt focuses on functionally tonal repertoire to develop her idea of becoming, and both Lofthouse and Reddick can still discuss key areas with varying amounts of coherence. What about repertoire that fully rejects any obvious semblance of functional tonality, such as Yun's First Symphony? Additionally, Lofthouse and Reddick rely on ideas about rotation to build their conceptions of overlap and fusion. How do formal structures that eschew a rotational orientation assert overlap between phrasal boundaries?

As developed in this chapter, an approach based on permeable boundaries allows scholars to address both questions. Essentially, the secondary-parameter network's focus on secondary parameters allows it to look beyond foundational compositional decisions, such as those regarding tonality or structure, and get to the heart of how these nuanced boundaries

³⁰ Reddick, "Formal Fusion and Rotational Overlap," 4.

³¹ Reddick, "Formal Fusion and Rotational Overlap," 32.

³² Reddick, "Formal Fusion and Rotational Overlap," 32.

work. As such, the permeable boundaries approach can apply to the repertoire discussed by Schmalfeldt, Lofthouse, and Reddick, though it might yield slightly different results, but a significant benefit of this method is that it can apply to any repertoire—all music, after all, includes secondary parameters in some way, shape, or form. I will briefly discuss the methodological interactions between these four perspectives before applying permeable boundaries to four examples from the first movement of Yun's First Symphony. Permeable boundaries and becoming may be related, and the instances of formal overlap, rotational overlap, and formal fusion are closely related to permeable boundaries.

While becoming requires the unification of two phrases, those involved with permeable boundaries retain their original and distinct identities. In other words, permeable boundaries require two distinct phrases to intersect and retain their own identities, and the first phrase still possesses its closure—which simply occurs after the next phrase has already begun. Even though a clear moment of structural change may not exist when permeable boundaries occur, both sections involved retain their own identities. That said, it may still be possible that the two types of permeable boundaries discussed here might be employed as techniques to achieve becoming in some circumstances; the final example in this chapter explores this relationship.

Because permeable boundaries include the overlap between two different phrases, Reddick's formal overlap occurs. The distinction between becoming and formal overlap means that functional overlap is also present in permeable boundaries: it occurs during the overlap stage of a permeable boundary, where two interthematic or intrathematic functions are simultaneously present. It dissipates with the end of the overlap when there is only one formal function.

Regardless of how one conceives of rotational overlap, it likely results in a permeable boundary. In these instances, two formal sections occur at the same time, and a cadence

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occurs; Lofthouse particularly emphasizes this latter point.³³ In fact, some of the more common locations for flexible formal boundaries include the junction between development and recapitulation, and the move from S to the coda. Both Lofthouse and Reddick examine these locations as examples of rotational overlap, and, as I will discuss below, Yun presents permeable boundaries at both junctures. It would seem that, regardless of one's approach, structural play at form-defining moments is not a new idea.

Furthermore, permeable boundaries and formal fusion are independent phenomena, though it is possible that a theme can partake in both compositional decisions. It is possible that permeable boundaries occur within an intrathematic formal function, such as a small ternary form—i.e., between the A and B or B and A' sections—or between two interthematic formal functions, such as the end of the small ternary and what comes next.

Thus, permeable boundaries offer an overarching, generalized account of what several other scholars have previously identified in various repertoires. Having explored the relationships between permeable boundaries and becoming, functional overlap, rotational overlap, and formal fusion, I will now return to the first movement of Yun's First Symphony and explore several examples of permeable boundaries. The presence of numerous permeable boundaries in this movement highlights the pervasiveness of a sonata-form structure as composers continued to develop new types of music and musical styles.

<u>P/TR:</u>

Example 7 presents the first instance of a permeable boundary (between P and TR) in the first movement of Yun's First Symphony. As demonstrated above, closure for the P zone occurs in m. 18, after which the transition begins. However, the P zone is not yet finished. It

³³ Lofthouse, "Rotational Form and Sonata-Type Hybridity," 113-115.

restarts in m. 23, at which time the TR yields. A second moment of the P zone's closure occurs in m. 28, and this moment is its full conclusion, so that the TR can proceed. (Because it has two moments of closure, P could be considered to be "overdetermined," per Hepokoski and Darcy.³⁴) Overall, P occurs in mm. 1-27 and TR occurs over mm. 18-39. Functional overlap is concomitant with the overlap section and thus occurs in mm. 18-27. Aside from this alternating overlap, both sections are fully independent and free-standing. Thus, the permeable boundary has no effect on the exposition's structure.

³⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 74.



Example 7. Isang Yun, Symphony No. 1, I, mm. 18-27: The first instance of a permeable boundary occurs between P and TR in Yun's First Symphony, mm. 18-27. © Copyright 1983 by Bote & Bock GMBH & CO., Berlin

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Hepokoski and Darcy say that it is possible for P to "dissolve away (via a TR)" to

avoid executing a PAC, but the implication is that there is no solid boundary between P and TR zones.³⁵ The "P=>TR merger" begins with P materials and ends with a medial caesura

³⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 71.

(with a half cadence).³⁶ However, because P has a definite conclusion after m. 27, no merger is present in the first movement of Yun's First Symphony.

MC-fill/pre-S:

As previously mentioned, the MC-fill and pre-S materials in the exposition create another permeable boundary. This instance presents a simultaneous type because the pre-S materials enter in m. 44 while the MC-fill materials continue to sound. Example 8 shows that overlap occurs from mm. 44-47, as the S theme winds up, and it concludes when the S theme properly starts in m. 48. The permeable boundary ends in m. 47 so that the S zone's theme can emerge.



S's accompanimental gesture/S wind-up

³⁶ Hepokoski and Darcy, *Elements of Sonata Theory*, 85.



Example 8. Isang Yun, Symphony No. 1, I, mm. 44-48: This permeable boundary occurs when the MC-fill and pre-S materials overlap.

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Caplin allows for the obfuscation of the boundary between the transition and subsidiary theme, which occurs when the transition lacks a concluding unit and the subsidiary theme has no initiating unit.³⁷ Sometimes, these two interthematic formal functions fuse together (that modulates to and confirms a new key with a PAC).³⁸ Additionally, in the recapitulation, the main theme and transition may "fuse" when the end of the former and beginning of the latter are both omitted so that the middle of the main theme leads directly to the middle of the transition.³⁹ When this occurs, the main theme might conclude with a half cadence (rather than a perfect authentic cadence), repetitions may be deleted, new model-sequence techniques may be present, and the music might emphasize flatter tonal regions.

³⁷ Caplin, *Classical Form*, 201.

³⁸ Caplin, Classical Form, 203.

³⁹ Caplin, *Classical Form*, 165.

While Hepokoski and Darcy allow for the presence of "caesura-fill" and "expanded caesura-fill," such fill does not serve to obscure the boundary between TR and S.⁴⁰ It is also possible that the medial caesura is declined or even blocked. In cases of the former, the music loops back around to achieve a medial caesura, which may or may not occur in conjunction with a trimodular block. When the latter occurs, a "de-energizing transition" achieves a perfect authentic cadence in a new key, thus "unlocking" the S zone.⁴¹ Continuous expositions occur when an expected medial caesura never occurs—that is, the transition dissolves into *Fortspinnung* modules. As discussed earlier, though, the medial caesura does present itself to establish a two-part exposition, so that Yun's caesura-fill and S zone remain distinct from each other.

Working from Hepokoski and Darcy's definition of medial caesura, Richards argues that Beethoven's medial caesuras became increasingly obscured throughout his compositional career. Up to four elements can obscure the three parts of a medial caesura ("a harmonic preparation, a textural gap, and an acceptance by S").⁴² Richards's work shows how norms could evolve through a composer's lifetime, but what is most important for the dissertation at hand is that the medial caesura continued to be present despite any obfuscating factors. Even as obscured medial caesuras produce connectivity and continuity between a movement's TR and S, understanding them within Beethoven's whole output reveals that the essence of the medial caesura remains. The permeable boundary between Yun's caesura-fill and S zone is, in some ways, most akin to Beethoven's obscured MC's because both result in the blurring of the line between TR and S, even if the exact underpinnings of the obfuscation differ.

⁴⁰ Hepokoski and Darcy, *Elements of Sonata Theory*, 40-41.

⁴¹ Hepokoski and Darcy, *Elements of Sonata Theory*, 48.

⁴² Mark Richards, "Beethoven and the Obscured Medial Caesura: A Study in the Transformation of Style," *Music Theory Spectrum* 35, no. 3 (Fall 2013): 168.

<u>RT/P:</u>

The permeable boundary that occurs in mm. 105-108 shows that this phenomenon can happen between sonata sections as well as between themes: this is the moment when retransition (RT) moves to recapitulation. Example 9 shows that the RT has the highest amount of energy for the whole development, due to its fast rhythms, dense counterpoint, loud dynamics, and large orchestration. Woodwinds, percussion, and strings have developmental materials with trills, fast rhythms, and dense textures, while brass begin to move towards P in m. 105, with long notes, ever-changing dynamics, offset entrances. These secondary parameters show that functional overlap is present as well, with the RT's fragmentation, dynamics, and instrumentation, and P's instrumentation. By m. 109, the RT has concluded and P definitively returns, with its focus on brass instrumentation (to the exclusion of other instrument groups), dynamic contrasts, and varied entrances.





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Example 9. Isang Yun, Symphony No. 1, I, mm. 105-109: The permeable boundary between the end of the development (retransition) and recapitulation occurs in mm. 105-108.

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The permeable boundary in this location (the junction between the development and recapitulation) has significant historical precedent. Peter H. Smith examines Brahms's use of overlap between these two sections in several of Brahms's compositions, including his Piano Quartet in C-minor, Op. 60, in *Expressive Forms in Brahms's Instrumental Music.*⁴³ For Smith's analysis, overlap often concerns structural downbeats and the timing as to when thematic and tonic return occurs. In some instances, such as in the first movement of Brahms's Op. 60, a surface-level return of the theme and tonic gives the illusion of the recapitulation's beginning, but without the recapitulatory function.⁴⁴ Smith writes, "The unusual emphasis on the dominant allows Brahms to conflate the return of the tonic and the structural close into a single entity. He thereby merges the divided middleground of sonata form into a continuous background... Because the recapitulation avoids a structural rebeginning, the dominant prolongation in the recapitulation resides on the same level as the initial and final tonics."⁴⁵ In the Andante third movement of this piece, the B materials' return

⁴³ Smith, Expressive Forms in Brahms's Instrumental Music.

⁴⁴ Smith, *Expressive Form in Brahms's Instrumental Music*, 79.

⁴⁵ Smith, Expressive Form in Brahms's Instrumental Music, 117-118.

extends harmonic tension to create overlap between the retransition and reprise.⁴⁶ Smith's analyses show that Yun's permeable boundaries are not necessarily a new convention, at least at this location; instead, the analysis through secondary parameters offers a new analytic discussion.

S/Coda:

Example 10 shows the end of S and its move into the Coda across mm. 153-161. In short, this excerpt begins with S's conclusion and ends after the Coda has begun, but the transition between the two sections is far from clear. Despite the facts that there are two opportunities for the ESC and that the two-sixteenth-note closural motive is present in mm. 155 and 160, neither moment presents an all-encompassing change of secondary parameters to render it a satisfying moment of closure.

⁴⁶ Smith, *Expressive Form in Brahms's Instrumental Music*, 99.











Example 10. Isang Yun, Symphony No. 1, I, mm. 153-161: The permeable boundary between S and the Coda includes two potential locations for the ESC, but neither is particularly satisfying. © Copyright 1983 by Bote & Bock GMBH & CO., Berlin Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

There are two possible readings of the relationship between S and the Coda: a permeable boundary that leads to transformation of S into Coda, or a becoming. These potential options raise a variety of questions: Is it possible that a permeable boundary of sufficient length can become a becoming (pun intended)? Is a permeable boundary a twentieth-century analogue to becoming, with functional overlap as a defining qualification? Is it easier for a permeable boundary to cross a significant structural boundary than it might be for a becoming? To explore these quandaries, I will first analyze this excerpt as a permeable boundary and then as a becoming before reflecting on how this excerpt illuminates and obfuscates answers to these questions.

Yun presents two options that might be interpreted as the essential sonata closure (ESC): mm. 155 and 160. Both include the two sixteenth-note gesture that recently served to define the MC. However, there are few secondary parameters that change to establish that S has concluded. After both potential moments of closure, for example, the instrumentation (whole orchestra) remains at the same dynamic level (various iterations of *fortissimo* and *fortississimo*).

To analyze this excerpt as a permeable boundary of the simultaneous type, the overlap begins at m. 155 with the first closing motive. Usually, the initial phrase (S, in this case) would yield to the subsequent phrase (here, the Coda) shortly after this overlap. M. 160, the next closing-like location, might prove to be a good opportunity for this, and S indeed abandons its melody. However, S's incorporation of the closural motive renders the latter closure more fleeting than the structural moment the ESC usually proves to be. The first moment of closure, then, sounds like an elided cadence, but the second is buried in the texture and sounds more like a cadence after the rhythms change.

Although neither moment of closure sounds as a satisfying ESC, rhythmic changes still define the overlap stage of the permeable boundary and the move to the Coda. Overall, as previously mentioned, few secondary parameters change throughout this section—tempo, orchestration, time signature, and instrumentation all remain consistent. The consistency of secondary parameters in this excerpt would seem to advocate for S's continued presence in this reading, even though its secondary parameters are not present. However, this is problematic because, for a permeable boundary to exist, S must conclude at some point for the Coda can fully and independently emerge. The closing motive permeates the music after m. 155 so that the rhythms change significantly, now permeating the whole musical texture.

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After m. 160, the rhythms change yet again to emphasize sextuplets. Thus, the two potential moments of closure define the overlap stage of this permeable boundary, where functional overlap occurs.

Only after m. 160 does the tempo change with a *poco a poco accel*. for a final push to the end of the movement (m. 164), and the *accel*. and rhythm are the only secondary parameters to change at this time.⁴⁷ By now, the new tempo and set of rhythms indicate a new formal function—that is, the S zone is over and now the Coda is in effect.

However, this is just one possible interpretation. One might argue that the degree to which Yun incorporates the motive of closure after m. 155 should not be considered overlap because the S zone's secondary parameters, essentially, disappear. Instead, an alternative interpretation would propose that S⇒Coda, so that these two sonata parts are inextricably linked. While waiting for the ESC, the listener realizes the becoming between S and Coda after reaching m. 160 through retrospective reinterpretation. Functional overlap occurs with the simultaneous S and coda functions. The secondary parameters' consistency supports the smooth transition from S to Coda in this analysis. A further point in favor of this reading is that the ESC is a significant cadence, and Schmalfeldt's becoming is an analytic tool that applies when music eschews a cadence—a point that also indicates that becoming and permeable boundaries are distinct entities. The presence of a becoming at this stage in the movement would further emphasize how the boundaries of the late twentieth-century sonata form can become increasingly obscured while still retaining the basic sonata structure.⁴⁸

Neither solution seems to have all the answers. The permeable boundary explanation does not adequately address why so few secondary parameters change between S and the Coda, while the becoming solution fails to account for Yun's use of the closing motives. Is it

⁴⁷ The sextuplet's presentation of thirds (a consonant interval) likely assists in establishing the after-the-end formal function.

⁴⁸ This is especially true given that there is also a permeable boundary between MC/S in the recapitulation.

possible to expect a permeable boundary at a given moment of listening, but this actually turns into a becoming? Alternatively, is it possible that successively small moments of closure obscure the differences between a permeable boundary and becoming? It follows the closing pattern of diminishing size from the exposition, while also explaining why the analytic decision between permeable boundaries and becoming is so difficult. The fact that recapitulations are not analogous to expositions complicates locating the ESC and how it might work. Rather than decide on the best analysis, it is more instructive to reflect on how this passage mirrors on the relationship between permeable boundaries and becoming.

Permeable boundaries and becoming seem to be two sides of the same coin, so to speak, and somehow it seems appropriate that this should be the case. Perhaps Yun's excerpt even demonstrates an instance of permeable boundary⇒becoming. Such synthesis is possible because the becoming allows the initial interpretation to remain in and even to inform the final interpretation. Permeable boundaries, then, seem to be in some sort of continuum relationship with becoming, where the continuum is based on the presence of functional overlap and an excerpt's location on the continuum originates in how the composer treats closure.

At this stage, it is difficult to make general assessments about the relationships between the secondary-parameter network, permeable boundaries, and becoming. Analysts need to understand their interactions, but to truly delve into the questions raised here lies outside the scope of this dissertation. How does one know, in other words, that a permeable boundary remains independent? Does the correct interpretation hinge only on whether or not S and the Coda merge, or are there other criteria? Additionally, how permeable boundaries and becomings handle the crossing of significant structural boundaries is currently unknown.

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Reddick has examined instances of $RT \Longrightarrow Recap$,⁴⁹ but analogous studies are needed on permeable boundaries before this analysis can be completed.

Understanding Yun's compositional background is vital for full appreciation of permeable boundaries in the first movement of his First Symphony. While scholars disagree as to the exact number and parsing of Yun's compositional periods,⁵⁰ but they agree that all of his symphonies belong to the same compositional period, which began in the early 1980s. His symphonic output is marked by "humanistic commitment," and the First Symphony is concerned with the nuclear threat.⁵¹ Yun's music presents a combination of Eastern and Western influence embodied through, respectively, Korean court music and the avant-garde tendencies of the Darmstadt school of composers. Yun believed that music is "of the cosmos" and maintains a Taoist perspective of composition: "Music flows in the cosmos and I have an antenna which is able to cut out a piece of the stream. The part which I have cut out is organized and formed through my own thought and body processes, and I commit it to paper."52 While Yun consciously tried to integrate Eastern and Western culture in his compositional process, I argued above that secondary parameters are vital to recognizing the sonata-form structure of the first movement of his First Symphony. Now, I want to add another layer to this argument: that permeable boundaries are vital to an integrated interpretation of Yun's (musical) identity.

Essentially, reading this movement in terms of secondary parameters and permeable boundaries leads to understanding the blurring of formal boundaries can be interpreted as a metaphor for the same treatment of cultural ones. Yun's use of both Korean and European

⁴⁹ Reddick, "Becoming at a Deeper Level."

⁵⁰ See Jung, "An Exploration," 14; and McCredie, "Isang Yun," 588.

⁵¹ McCredie, "Isang Yun," 591-592.

⁵² Yun, "Where is music going today...," 46, 45.

musical influences is well documented: he uses both Korean and European instruments and compositional techniques.⁵³ Francisco Feliciano writes that "Isang Yun has on many occasions made it explicit how much he treasures Korean traditional music and has always emphasized the wealth that lies hidden in it," and Jung explores how he "sought to develop his compositional style by fusing traditional Korean music through Western avant-garde music."⁵⁴ Furthermore, Yun views himself as "exactly in the middle" of Asian and European cultures; he does not view his music as more of one or the other, and he is "naturally convinced of the unity of these two elements."⁵⁵ Thus, Yun's music and life exhibit how he integrates both cultures into a single entity. Permeable boundaries—as the assimilation of two formal functions at their junction—are thus a musical manifestation of how Yun's cross-cultural identity plays out in relationship between the Korean and European.

Conclusion

The preceding chapter argued that secondary parameters define form, even when the boundaries between interthematic formal functions are not straightforward. Permeable boundaries are significant for late twentieth-century symphony sonata forms because they provide composers with a way to intermix various parts of sonata form. In this way, various themes (or theme zones) or sections are no longer self-contained or self-standing as they usually were in the sonata forms of previous centuries. Retention of both preceding and

⁵³ Francisco F. Feliciano, "Isang Yun (1917-)," in *Four Asian Contemporary Composers: The Influence of Tradition in Their Works* (Quezon City, Philippines: New Day, 1983), 32-66; Jung, "An Exploration," 14-25; Yun Jeong Kim, "Isang Yun's Violin Concerto No. 1 (1981): A Fusion of Eastern and Western Styles, and the Influence of Taoism" (D.M.A. document, University of Cincinnati, 2012), 15-20; and McCredie, "Isang Yun," 589.

⁵⁴ Feliciano, Four Asian Contemporary Composers, 34-35; Jung, "An Exploration of Sigimsae," 6.

⁵⁵ Yun, "Where is music going today...," 46.

consequent sections preserves structure, even if one cannot locate an exact moment where the sections change.

The secondary-parameter network stands up to permeable boundaries in that it is undisturbed by their presence. The secondary-parameter network thus, again, proves itself to be a valuable analytic tool for analysts. The first movement of Isang Yun's First Symphony includes a variety of examples that demonstrate how the secondary-parameter network operates, both with and without permeable boundaries.

The above study focused more on the Western inheritances of Yun's music—that is, the sonata-form first movement of his First Symphony, but an examination that is truer to Yun's balance of Eastern and Western influences is quite possible. In light of Yun's use of his *Hauptton* technique and the significance of Taoism and Korean court music, the secondary-parameter network could be adjusted to include ornamentation and even vitality as an additional secondary parameter. How do different sections of the same movement or piece employ similar or varied ornamental devices? A tactic such as this would be more in line with Rao's call for a culturally sensitive approach than the one taken above and would be paramount to reorienting the study of Yun's music to focus equally on Eastern and Western musical techniques. For Yun's First Symphony, this perspective would also reflect the "symbiose and synthesis" that Yun sought in his symphonic works.⁵⁶ Recentering in this way would allow a decolonized application of the secondary-parameter network to more of Yun's compositions and provide musicians with greater insight into how he blended cultures.

⁵⁶ McCredie, "Isang Yun," 592.

Chapter 4: Free Micropolyphony for Interthematic Formal Functions and Developmental Secondary Parameters in Denisov's First Symphony

This chapter argues that, in late-twentieth-century sonata-form movements, middle sections continue to function as developments. The first movement of Edison Denisov's First Symphony (1987) demonstrates how late-twentieth-century development sections rely primarily on a few specific compositional techniques, such as fragmentation, repetition (literal or sequential), layering, and faster alternation between instruments for the purposes of this project. As a group, I call them "developmental techniques" because these techniques proliferate in twentieth-century development sections; I will define these in greater detail as needed for analysis.

Before this analysis is possible, though, one must this movement's exposition. This chapter's first goal is thus to parse out the first section of the movement in question; I will return to discussion of Denisov's development section as this chapter's second goal. Instead of writing singable melodies that are supported by a clear accompaniment to create a homophonic texture, as has been seen in several expositional zones in previous chapters, what I call "free micropolyphony" that casts an overall mood on each formal unit. As will be discussed below, free micropolyphony differs from György Ligeti's original use in that each of multiple entrances introduces independent musical materials; recognition of Denisov's background as an unofficial Soviet composer and his second conservatory period are vital to correctly interpreting free micropolyphony, so this chapter reviews his background before delving into the analytical and theoretical arguments. After briefly exploring Denisov's background, the first analytical section has two main tasks: first, to develop a working definition for free micropolyphony after Ligeti's micropolyphony; and second, to demonstrate how the secondary-parameter network manages free micropolyphony. Despite the apparent similarities of the P and S zones, the secondary-parameter network has the power to tease out their differences. The analysis presented in conjunction with this

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discussion will demonstrate how secondary parameters detangle formal function through free micropolyphony.

After analyzing Denisov's exposition, this chapter turns to its second main goal: consideration of the development section based on secondary parameters, rather than functional tonality. In this regard, this chapter and the next form a complementary pair: the current chapter demonstrates which developmental techniques are present in a late-twentiethcentury development, while Chapter 5 focuses on how the secondary-parameter network elucidates these developmental techniques. On the mechanics of the secondary-parameter network in development sections, it will suffice to say, for now, that it assumes each entrance's independent secondary parameters—from which it can identify motivic repetition through consistencies with rhythms, instrumentation, and dynamics—before recontextualizing each entrance with those around it.

This study focuses on how the development section of the first movement of Denisov's First Symphony relies on fragmentation, layering, and fast alternation between instrument groups.¹ For the purposes of this repertoire, fragmentation is "a reduction in length of units" with respect to previous iterations.² Layering occurs when multiple musical events, which were previously independent, occur simultaneously. It relates to both Ben Duane's idea of "textural strands" and Jennifer P. Beavers's "auditory streams."³ In instances of layering, multiple textural strands or auditory streams are present; Beavers calls these

¹ Sequencing may also occur, but it is less common that in tonal sonata form developments. When sequencing does occur in late-twentieth-century repertoire, it tends to be less exact than what one usually thinks of when considering the phenomenon. See mm. 149-152 of the development section of Rautavaara's Third Symphony for one example.

² William E. Caplin, *Classical Form: A Theory of Formal Functions for the Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998), 255.

³ Ben Duane, "Thematic and Non-Thematic Textures in Schubert's Three-Key Expositions," *Music Theory Spectrum* 39, no. 1 (Spring 2017): 36-65; Jennifer P. Beavers, "Ravel's Sound: Timbre and Orchestration in His Late Works," *Music Theory Online* 27, no. 1 (March 2021): 2.3.

instances "auditory scenes."⁴ Faster alternation between instrument groups occurs relative to the pace of the exposition, and often with fragmentation.

Of all the movements studied for this investigation, this movement's development relies most heavily on these techniques, to the extent that the whole development can be explained through them. I will show how free micropolyphony is particularly conducive to the application of these developmental techniques, rendering this movement an ideal case study. Late twentieth-century development sections retain the function of their earlier tonal counterparts in that they "generate[] the greatest degree of [] instability in the movement."⁵ They fulfill this function through their use of the above-stated developmental techniques.

Background: Edison Denisov

Born in Tomsk, Siberia, in 1929, Denisov is one of numerous composers to come of age during the Soviet Union's Thaw. As such, he is one of the Soviet Union's so-called unofficial composers who took interest in Western avant-garde musical techniques, including twelve-tone composition and serialism. Soviet musicians did not have open access to musical ideas in the same ways as European composers, but that does not mean that they were unable to explore the newest musical movements. Peter Schmelz details how the younger generation of composers learned some of these techniques from Vissarion Shebalin, a professor at the Moscow Conservatory, and the several ways in which they sought to learn about avant-garde music in the 1950s and 1960s, including forming clubs to listen to unsanctioned music and their reception of scores and recordings from foreign students who had easy access to them.⁶

⁴ Beavers, "Ravel's Sound": 2.3.

⁵ Caplin, Classical Form, 139.

⁶ Schmelz, *Such Freedom, If Only Musical: Unofficial Soviet Music During the Thaw* (New York: Oxford University Press, 2009), 26-66.
Individual unofficial composers realized, upon their graduations from the Moscow Conservatory in the late 1950s, the presence of gaps in their education caused by the Soviet Union's rejection of Western culture. To remedy this, Denisov began his "second conservatory" period, where, during the decade after his studies at the Moscow Conservatory, he studied the music of composers such as Boulez, Ligeti, and Stockhausen,⁷ "who he felt had been unjustly left out of the Conservatory's official curriculum."8 This was a period of immense pressure for these composers, as they sought to minimize the amount of time between learning of and mastering serial techniques.⁹ Zachary Cairns scrutinizes Denisov's 1968 analysis of Webern's Op. 27 Piano Variations, one outcome of Denisov's second conservatory study, to gain insight into what Denisov learned about serial music as he got to know it.¹⁰ Alfred Schnittke, a Moscow Conservatory contemporary of Denisov's who was also interested in avant-garde music, undertook a similar study of Ligeti's *Lontano* in 1970.¹¹ Schnittke's discussion of *Lontano* is significant for the present study because it links Denisov, an unofficial Soviet composer, with the study of micropolyphony as an avant-garde technique. Together, their discussions suggest how an unofficial Soviet musician might interpret Western avant-garde music.

Both Denisov's and Schnittke's analyses of Webern and Ligeti, respectively, are highly thorough. Schnittke extracts a "horoscope" or "secret formula" at *Lontano*'s essence.¹²

⁷ Edison Denisov and Jean-Pierre Armengaud, *Entretiens avec Denisov: Un compositeur sous le régime soviétique* (Paris: Plume, 1993), 73.

⁸ Zachary Cairns, "Edison Denisov's Second Conservatory: Analysis and Implementation," *Indiana Theory Review* 31, no. 1-2 (Spring/Fall 2013): 56.

⁹ Svetlana Savenko, "The Russian Avant-Garde of the 1950s and 1960s: Aesthetics and Technical Problems," Proceedings of the International Conference *Beyond the Centres: Musical Avant-Garde since 1950* (Thessaloniki, Greece, July 1-2, 2010), 3.

¹⁰ Cairns, "Edison Denisov's Second Conservatory."

¹¹ Alfred Schnittke, "Ligeti's Orchestral Micropolyphony," in *A Schnittke Reader*, ed. Alexander Ivashkin, trans. John Goodlife (Bloomington: Indiana University Press, 2002): 225-228.

¹² Schnittke, "Ligeti's Orchestral Micropolyphony": 225.

Denisov identifies the second variation's row forms based on their "series-type" (original or inverted) and "method of presentation" (forward, backwards, or "wrapped").¹³ Cairns writes that, for Denisov and the other unofficial composers, "twelve-tone composition was simply a new tool to be included in the compositional toolbox, alongside aleatoricism, graphic notation, and free atonality" that could be "used or ignored" as necessary.¹⁴ Schnittke reveals this perspective (perhaps even projecting it on to Ligeti) through his assessment that the four "irrational" elements that do not originate in the micropolyphony serve cadential function and his conclusion that Ligeti rejected strict serialism as a "dogmatic technique" after mastering it in the 1950s.¹⁵ Thus, unofficial Soviet composers were interested in acquiring additional compositional techniques in their effort to catch up, so to speak, to the European counterparts, but without commitment to any particular technique unless it best represented the aesthetic that they sought to convey. Having provided a brief overview of Denisov's background and musical situation, I will turn to a discussion of how Denisov employs free micropolyphony in the first movement of his First Symphony.

Free Micropolyphony for P and S Zones

Ligeti defines micropolyphony as "the technique of the close and intense amalgamation of instrumental voices (and vocal lines)."¹⁶ Jane Piper Clendinning identifies two types of micropolyphony: "microcanonic compositions" and "pattern-meccanico compositions."¹⁷ Microcanon occurs when "a melodic line is set against itself in canon in

¹³ Cairns, "Edison Denisov's Second Conservatory," 59-60.

¹⁴ Cairns, "Edison Denisov's Second Conservatory," 53.

¹⁵ Schnittke, "Ligeti's Orchestral Micropolyphony": 227-228.

¹⁶ György Ligeti, "Introduction to San Francisco Polyphony," Musik und Bildung vii (1975), 500.

¹⁷ Clendinning, "Contrapuntal Techniques in the Music of György Ligeti," abstract.

many voices at short time intervals to form the musical texture," and pattern-meccanico compositions use a compound melody that emerges from "the interaction of a few lines, each of which represents several contrapuntal strands" and each line "is constructed from repeated groups of pitches, or patterns."¹⁸

Amy Bauer uses secondary parameters to analyze several of Ligeti's micropolyphonic compositions.¹⁹ Ligeti's "reversal" of the usual relationship between primary and secondary parameters creates the basis for formal structures in his music: "the elevation of timbre, articulation and dynamics" are now "determinants of musical structure" instead of pitches and rhythms.²⁰ In *Lontano*, different timbres and rhythms mark each canonic entrance, and instrumentation and articulation help elucidate closure and form in the Kyrie from the *Requiem*.²¹ For *Apparitions*, Bauer locates Ligeti's reprioritization of texture as a "return to a pre-Classical state" that also "ignor[es] classical models of formal shape and development."²² Her work establishes a precedent for micropolyphonic analysis with secondary parameters and shows how secondary parameters can be helpful in analyzing micropolyphonic music. The secondary-parameter network offers a similar perspective in that it employs secondary parameters, and, even though Ligeti generally avoided sonata form, it builds on Bauer's work through offering a more systematic approach to the discussion of secondary parameters.

The various theme areas of the first movement of Denisov's First Symphony bear striking similarities to Ligeti's micropolyphonic compositions—particularly Denisov's

¹⁸ Clendinning, "Contrapuntal Techniques in the Music of György Ligeti," 30.

¹⁹ Amy Bauer, "Composing the Sound Itself': Secondary Parameters and Structure in the Music of Ligeti," *Indiana Theory Review* 22, no. 1 (Spring 2001): 37-64.

²⁰ Bauer, "Composing the Sound Itself": 38.

²¹ Bauer, "Composing the Sound Itself": 39-41, 43.

²² Bauer, "Composing the Sound Itself": 64.

transition with the opening of Ligeti's *Apparitions*, an early micropolyphonic piece.²³ Example 1 shows the first four of fifteen entrances at the opening of Denisov's movement. In contrast to Ligeti's use of strict patterns, free micropolyphony requires each line's independence, no matter how many musical lines are present. In other words, each contrapuntal strand has its own rhythms, dynamics, and contour, so that the lines' aggregate presents a concatenation of sounds. At the same time that it blocks the idea of a single melody, free micropolyphony also renders ideas of tight-knit or loose structure irrelevant: there are no consistent motives, no definition of intrathematic formal functions or phrase groupings, or pedals. Though Denisov's compositional technique differs from Ligeti's, both result in an extremely dense musical texture.



Example 1. Edison Denisov, Symphony No. 1, I, mm. 1-5. The P sound world is marked by its dynamics, range, instrumentation, rhythmic values, and dense contrapuntal relationship. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

²³ Jane Piper Clendinning, "Contrapuntal Techniques in the Music of György Ligeti" (PhD diss, Yale University, 1989), 11.

The first movement of Denisov's First Symphony provides a good example as to why this dissertation has thus far avoided a thematic or melodic discussion of form: the concept of "theme" becomes increasingly slippery in the twentieth century and thus does not present a sound foundation for analytic discussion. For example, an analyst would be hard-pressed to identify a single P or S melody in this movement, and Hepokoski and Darcy's concepts of "zones" would surely be welcomed.²⁴ This quality of free micropolyphony originates in Ligeti's interest in a knowledge of counterpoint by Renaissance and Baroque contrapuntal masters such as Ockeghem, Palestrina, and Bach. Micropolyphony—and free micropolyphony by extension—fundamentally rejects any notion of a single melody's increased importance, so that there is no single theme that defines a given interthematic formal function. The secondary-parameter network's focus on secondary parameters positions it as an optimal analytical tool for this reason.

In this chapter's analysis of the exposition, the secondary-parameter network captures the aggregate of all contrapuntal strands— the overall combinations of dynamic level, instrumentation, rhythms, etc.—though it could alternatively be applied to individual lines an approach that is more fruitful for analysis of development sections. Though multiple free micropolyphonic lines might develop a motive, their overall independence is paramount to this contrapuntal technique's identity. Denisov's movement presents a further challenge, in that the secondary parameters of P and S zones are quite similar: both are freely contrapuntal, with many instruments, and present a variety of rhythms and contours, with dynamic fluctuation. The secondary-parameter network can explain their similarities while also illuminating their differences. The following discussion will explore the definition of both P

²⁴ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth Century Sonata* (New York: Oxford University Press, 2006), 9.

and S zones and implications for the movement's form that follow from their micropolyphonic identity.

Example 1 (above) shows the opening of Denisov's First Symphony. The P zone begins at a *pianissimo* dynamic in a low tessitura, with bassoon, contrabassoon, and bass clarinet. Its rhythms, though flowing, are not particularly fast: quarter- and eight-note triplets, dotted quarter notes and eighth notes, and eight-note quintuplets are common. No instrument has a primary melody, and the contrapuntal texture becomes increasingly complex as the P zone continues.

The secondary-parameter network elucidates that the P zone is defined by its dynamics, range, instrumentation, rhythmic values, and dense contrapuntal lines. As it progresses, the P zone's instrumentation expands to include higher-ranging instruments such as clarinets and horns, while still providing a bass foundation of tuba, trombones, and contrabassoon. The dynamic level gradually increases to *forte* and *fortissimo* at m. 21—a moment that also incites the highest range in the P zone (not shown). The P zone's tight-knit features include its systematic instrumental and range expansion, dynamic increase, and achievement of a single climax (m. 23), along with the alignment of the climax with the greatest instrumentation and highest range. Even though the P zone does not possess elements of tight-knit structure that Caplin would readily identify, its teleological work is key for this quality.

Example 2 presents an excerpt that occurs near the beginning of the S zone, but one that occurs after it has established an identity independent of the transition. The first glance (or listen) to Denisov's First Symphony reveals numerous similarities between the P and S zones. Both formal sections contain many contrapuntal layers with their own rhythmic values and fluctuating dynamic levels. As will be discussed below, the combination of these entities defines both as free micropolyphony.

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Example 2. Edison Denisov, Symphony No. 1, I, mm. 120-121: The beginning of S shows that S also has numerous, independent contrapuntal layers. Though Denisov divides each string instrument section into three parts, Example 7 shows only one line for simplicity. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

There are, however, several key differences between P and S. First, while P contains only winds and percussion, S mostly excludes these instrument groups to focus on the strings. This renders the S zone's range to be generally higher than that of P. Second, the first violin line rises to the top of the musical texture, so that the S zone almost becomes a homophonic texture with free micropolyphonic accompaniment. In Example 2, the top divisi line of the first violins is higher in range and louder in dynamic than all other instruments. Most instruments have *piano* or *pianissimo* dynamic level and are much lower in range. Third, the S zone's rhythms are consistently faster than those of the P zone. Example 2 contains quarter and eight-note triplets, dotted quarter notes, and eighth notes, but it also includes sixteenthnote quintuplets and sextuplets, which P does not possess. The S zone additionally contains trills and should still be performed at the *Agitato* tempo, both of which are remnants from the transition.

A second significant difference between the P and S areas arises in terms of texture. While a free micropolyphonic passage might sound dense or busy, it is possible that some lines might more readily float to the musical surface. This phenomenon is more likely to occur with higher-range instruments, such as the clarinet's upper tessitura in the P zone (not shown) or the first violin line in the S zone. Example 2 presents an extreme case, where the first violin line's high register and dynamic level place it at the fore of the musical texture. In comparison, the other strings grovel in a lower tessitura and quieter dynamics. The violin's melodies also distinguish it from the supporting instruments: while the second violin, viola, and celli include many fast rhythms (primarily sixteenth-note quintuplets, sextuplets, and septuplets), the first presents much slower rhythmic values (its fastest rhythm is an eighth note, and even that is tied to a quarter-note triplet). Thus, Example 2 portrays an adjusted version of free micropolyphony. Instead of each line's equal importance, as had been and will be assumed in other examples, the first violin's stark separation suggests that it is of greater importance here—perhaps even to the extent that it could be designated as its own melody. In other words, while instruments take turns emerging from the overall freely micropolyphonic texture (including at the movement's opening with staggered entrances), each flash of a motivic snippet presents an opportunity for that motive to develop into a melody and alter the internal relationship between each voice within a freely micropolyphonic texture. A significant difference between the P and S zones of the first movement of Denisov's First Symphony is that the first violin takes advantage of this opportunity in the latter—a move which results in the drastic divide between first violin and other strings in Example 2.

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The third main difference between P and S zones concerns the latter's loose-knit structure. The excerpt in Example 2 shows how S's musical qualities described above also lend it a general air of loose-knitedness, which is primarily embodied through its cacophony. The timbral similarities between various string instruments renders the S zone denser than that of P—an effect compounded by the tripartite divisions of each instrument (Example 2 shows only one representative of each for simplicity). The frequency of fast rhythms (sixteenth-note quintuplets and sextuplets are not uncommon) and trills further thicken the texture. Overall, the S zone is less regular than the P zone in its addition of instruments, and Example 3 demonstrates that it includes several brief interjections by winds and brass, quick juxtapositions that approach a developmental quality. Any possible goal for the S zone is unclear until the arrival of the strings' scales in m. 156; Example 4 presents the top (of four) first violin lines to show how it ushers in the S zone's moment of essential expositional closure. The arrow marks the moment of closure, which is also where the development begins.



Example 3. Edison Denisov, Symphony No. 1, I, mm. 147-149: The end of the S zone includes several quick juxtapositions between instrumental groups that approach a developmental quality. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*



Example 4. Edison Denisov, Symphony No. 1, I, mm. 155-158: The strings' descent ushers in the only clear moment of closure at m. 158, which is the EEC. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

Closure occurs through the stepwise motion between the final note of m. 157 and the whole note in m. 158; though Example 4 shows only one violin part, all string parts (the only instruments playing at this formal juncture) move by step from the end of m. 157 to m. 158. The whole note also presents relaxation due to its longer rhythmic value and decrescendo, even if the strings continue to trill. The violins' held note allows for a shift in instrumentation at m. 158: as the strings decrease in prominence, the low winds restart their low rumbling that opened the P zone. The return of P materials brings changes of dynamics (*fortissimo* to *piano*) and rhythmic values of quarter notes, quarter-note triplets, and eighth-note quintuplets that originally occurred in the P zone. The zig-zag line across m. 158 shows how a permeable boundary occurs between the end of the exposition and the beginning of the development (see Chapter 3 for a discussion of permeable boundaries).

Together, these two zones illustrate a broader conception of what constitutes a "theme" or a "thematic area." A melody with homophonic accompaniment is no longer necessary; instead, a composer is free to create a sonic setting that defines a particular sound

for each formal unit. The overall texture replaces a melody or its tonality, so that secondary parameters become even more important for the definition of each formal function or section.

The presence of free micropolyphonic sections that replace zones presents some complications for the development. First, the development section of a sonata-form movement usually includes expositional materials but, if an exposition employs free micropolyphony that does not include clear-cut motives, how can such motives be incorporated into the development? Second, as its own compositional technique, a development can include free micropolyphony, but it cannot be built exclusively on this technique, as this would eliminate opportunities to include mainstream developmental techniques such as fragmentation, alternation between instrument groups, layering, and the like.

To solve this quandary, the composer must be careful as to how he writes the expositional materials, and several musical qualities of Denisov's P zone suggest that he was mindful of these compositional materials. This zone emphasizes the low tessitura for some time (at least eleven slow measures at the movement's opening), and P's status as a small ternary phrase structure also reinforces the movement's opening. The low materials return after the percussion section, so that the low rumbling occurs twice before the zone concludes. Additionally, the higher, tinkling percussion in the P zone's B section provides stark contrast to the low winds—a difference that highlights its differences with the movement's opening. Together, these techniques facilitate the recognition of the low rumbling when it returns at the beginning of the development (m. 158), so that instrumentation and range become more significant formal markers.

Though Schnittke focuses less on the exact mechanics of micropolyphony than on the essence of free micropolyphony, his analysis leaves more room for interpretation of the definition of micropolyphony. By focusing on the aesthetics and affect, rather than the

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mechanisms to achieve it, Schnittke provides an alternative interpretation of Ligeti's micropolyphony and what is most significant about it. His observation that all elements originate in the same source reinforces the idea of multiple interpretations of the same musical object;²⁵ from his discussion, it would seem that a thematic interpretation would be quite convenient for a composer. In Denisov's First Symphony, however, the P zone's unified source seems to be the low woodwind rumbling; Denisov might be said to be reinterpreting the idea of a work's "'horoscope''' or "secret formula"²⁶—which is at the center of Schnittke's definition of micropolyphony—in a similar way to how he reinterpreted and freely used twelve-tone serialism.²⁷ In other words, the discussion of free micropolyphony presented above adheres to qualities that Schnittke extracted in his analysis and remains consistent with Denisov's use of other compositional techniques.

Development

Table 1 shows the secondary-parameter network's findings for the whole movement, even though only select excerpts from this movement will be discussed below. As a quick perusal of this table shows, the development includes many instances of fragmentation, layering, and alternation between instrument groups. The following discussion will explore several excerpts from this section to show how P, TR, and S materials into a coherent are all present in a "omnipresent working-out of expositional material."²⁸ Overall, extracting

²⁵ Schnittke, "Ligeti's Orchestral Micropolyphony": 227.

²⁶ Schnittke, "Ligeti's Orchestral Micropolyphony": 225.

²⁷ Cairns, "Edison Denisov's Second Conservatory," 84.

²⁸ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata* (Oxford: Oxford University Press, 2006), 195. Not all late twentieth-century sonata developments need to include all expositional themes. In this regard, Denisov's development is something of an anomaly. Other movements' developments focus on one theme (that of the first movement of Rautavaara's First Symphony emphasizes the S zone) and include new motives (that of the first movement of Yun's First Symphony presents a new motive near the development's end that always reminds the author of a musical theater song).

fragments from expositional free micropolyphony allows the development to automatically capitalize on one key developmental technique, and such fragmentation often leads to layering and quick alternations between instruments or instrument groups.

Exposition:	
P: mm. 1-68	
Small ternary:	
$A \cdot mm 1-34$	Δ
71. IIII. 1 34	instrumentation low weadwinds, and wally include brass
	-instrumentation. low woodwinds, gradually include brass
	-tempo: Lento
	-time signature: 4/4
	-rhythms: long notes; quarter- and eighth-note triplets, dotted
	quarter notes, eighth notes
	-texture: contrapuntal: becomes increasingly complex as
	instruments ioin
	dynomic: nignissimo
	-dynamic. <i>plunissimo</i>
B: mm. 35-48	B: mm. 35-48
	-instrumentation: percussion
	-tempo: tempo fluctuations written into score (<i>Poco niu animato</i> —a)
	tempo)
	time signature: 1/1
	-time signature. 4/4
	-myumis. eighti note urplets, quintuplets, sextuplets
	-texture: contrapuntal sound mass
	-dynamic: pianissimo
	-increased fragmentation; shorter bursts of activity punctuated by
	silence
	-"outbursts" gradually lengthen
A'. mm 17 69	A': mm 10.68
A : IIIII. 4/-08	
	-instrumentation: strings, percussion
	-tempo: a tempo
	-time signature: 4/4
	-rhythms: quarter note triplets; quintuplets
	-texture: homophonic, contrapuntal
	-dynamic: pianissimo and pianississimo
TR: mm. 69-104	-energy-gain: faster temp, consistently faster rhythms,
	fragmentation, faster alternation between instrument groups
	-instrumentation: winds, strings, brass
	-tempo: Agitato
	time signature: 1/1
	-the signature. T/T
	-texture: monophonic
	-dynamic: <i>pianissimo</i> , with crescendos and decrescendos
	-no MC (permeable boundary with S)

S: mm. 105-158	 -instrumentation: strings -tempo: (no change) -time signature: 4/4 -rhythms: eighth notes, whole notes, quarter note triplets and quintuplets, eighth note and quarter note triplets, sixteenth note sextuplets -texture: homophonic with contrapuntal accompaniment (violin theme clear) -dynamic: <i>piano</i>, with crescendos -EEC: m. 158 (descending scales, long note)
Development: mm. 158-234 (permeable boundary)	 -includes reference all zones from exposition: P, TR, and S -fragmentation through most of development -layering: mm. 183-186 (S and T) -layering: mm. 187-192 (P and TR) -alternation between different instrument groups: mm. 196-201 (violin, flute and clarinet, trumpet) -layering: mm. 205-207 (P and TR and 215-219; also fragmentation of TR materials -fragmentation and faster alternation between instrument groups: mm. 220-228 -RT: mm. 220-228 (dynamics, most fragmentation)
Recapitulation: mm. 229 (permeable boundary) -379	 P: mm. 229-253 -instrumentation: winds -tempo: <i>poco a poco pui tranquillo</i> (m. 230) -time signature: (no change) -rhythms: quarter note triplets, eighth note triplets and quintuplets, dotted quarter notes -texture: contrapuntal -dynamic: <i>pianissimo</i> S: mm. 254- -instrumentation: brass -tempo: <i>Poco pui animato</i> -time signature: (no change) -rhythms: quarter note quintuplets and triplets, dotted quarter notes, half and whole notes -texture: monophonic -dynamic: <i>pianissimo</i> -ESC: m. 318? TR: -energy-gain: <i>Agitato</i>, faster rhythms, fragmentation, faster alternation between instrument groups -instrumentation: winds -tempo: (no change) -thythms: thirty-second notes, thirty-second note quintuplets -texture: monophonic

-dynamic: pianissimo
-character: evokes wind
-m. 243: P; m. 347: S—P and S in closer proximity but not yet
merged

Table 1. The secondary-parameter network's findings for the first movement of Denisov's First Symphony.

Example 5 shows that mm. 188-190 fragment P materials and layer them with TRbased materials. Both A and B parts of P's small ternary are represented in this excerpt by the brass and percussion entrances, respectively. The contrabassoon and tuba's line reminisces of P materials due to its range and rhythm, while the percussion that enters in the excerpt's third measure matches the timbre, rhythms, and contrapuntal style of P's contrasting part. These materials demonstrate fragmentation because they are substantially shorter than when they occurred in P. P's A section consists of 34 measures, and its B section is 14 measures in length. A new juxtaposition of instruments originates in the combination of P and TR materials: because the strings continue the TR materials and do not yield to the percussion, these two instrument groups layer rather than alternate. The fact that the P zone's fragments occur in the same order as they were presented in the exposition, as well as the fact that they are not presented simultaneously, reflects their identities as part of the same interthematic formal function. In other words, the P sound world consists of two smaller-scale micropolyphonic structures, and of which Example 5 represents both.



Example 5. Edison Denisov, Symphony No. 1, I, m. 187-190: Fragmented P and TR materials create layering in Denisov's development section. Only the top line (of four) of transitional material, and only two of five percussion lines are given, for clarity and simplicity. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

In Example 5, the strings present the TR materials, which create layering by sounding with the P-based fragments. In this case, layering occurs between two different, simultaneous interthematic formal functions. It is intriguing that the TR materials act as a sort of bridge between the two parts of the P zone: the cello and viola overlap with, respectively, the materials at end and beginning of the P zone's A and B sections. It is almost as though the TR materials soothe the junction between the P zone's materials. Though this motion may be functionally appropriate for a transition, it is not fully necessary to weld together the P zone's A- and B-based materials, as they already occur together. Its presence, then, must be ascribed to this excerpt's location in the development section, where such layering is to be expected as a developmental technique.

Example 6 presents fragmentation of materials from the S zone. There are two entries of S materials in Example 6: temporally first, the trombone's dotted quarter note and tied half note, and, second, the trumpet's quintuplets. The flute's, oboe's, and clarinet's entrances build on the trumpet's quintuplets through their use of eighth-note quintuplets, and the oboe's statement is a transposition of the trumpet's fragmentation (though it begins on the second quintuplet). Versions of both motives occur prominently in S's section of the exposition and, due to P and S's natures as free micropolyphonic structures, fragmentation occurs as a type of melodic extraction in which recontextualized motives from the S zone create the illusion of fragmentation. Melodic extraction works with the melodies' isolated statements to make each melodic iteration seem shorter than the length of similar melodies in the exposition. During the S zone, in contrast, each sounding of a motive is significantly more likely to be cushioned by other accompanying materials or absorbed into the micropolyphonic texture. Examples 7a and 7b, respectively, show instance one of each example. Arrows point to S in both examples to distinguish it from the free micropolyphony surrounding each iteration.



Example 6. Edison Denisov, Symphony No. 1, I, mm. 168-174: The brass and winds present fragments of S materials. Though Denisov presents these materials with seventh-chord harmonies, Example 6 presents only the top layer of each for simplicity.

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Example 7a. Edison Denisov, Symphony No. 1, I, mm. 128-129: The trumpets' melody occurs as part of S's free micropolyphony with other textural strands. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*



Example 7b. Edison Denisov, Symphony No. 1, I, mm. 144-147: The S zone's motives are absorbed into the free micropolyphonic texture. To increase simplicity, Example 7b presents only one of the three canonical horn parts, and the top violin and trumpet/trombone parts. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

In Example 7a, the melody occurs over two other broad textural strands that consist of, respectively, strings and horns. As discussed previously, the freely micropolyphonic texture is of paramount importance to the S zone's identity in the exposition. Example 7b shows the S zone later includes the same motive (definable through its contour, and, to some extent, instrumentation and rhythms) but in a more integrated into the musical texture. The motive (here played by trumpets and trombones) and the horns' staggered entrances have more equal contrapuntal weight than in Example 7a. This combination, along with woodwinds' response in mm. 147-149 (not shown), indicates that the melody is integral to S zone's micropolyphony. Examples 7a and 7b thus encapsulate the S-zone motives' integration into the sound world as a whole, in opposition to the motives' isolated settings in the development.

In Example 6, each iteration of the S zone's eighth-note quintuplet motive (first performed by the trumpet) maintains a similar rhythmic profile: the four quintuplets, a dotted quarter note, an eighth note, and quarter note triplets. As a result, each statement is clearly based on the same motive. The motives' repetition contrasts with S's quick movements to other musical ideas, and the development helps clarify key motives that were muddled in the exposition's free micropolyphony. As can be seen through the brevity of Examples 7a and 7b, expositional iterations of the motive tend to be fleeting and move on to other notions relatively quickly.

The development section, however, has more space for repetition. Hepokoski identifies "circular stasis" as one element on rotational form, but this seems too large-scale of an explanation for such localized repetition as what occurs in Example 6.²⁹ Instead, the repetition possesses more of a ruminative quality. This might be a surprising affect for a development section, which is usually based on instability and motion towards the recapitulation.³⁰ Even though the concept of rotational form as a sonata-form deformation is too large for this example, Hepokoski's definition (of rotational form) as "momentary withdrawal from linear time" does seem appropriate for this moment and it captures the excerpt's ruminative affect.³¹ To label the repetition of a melodic motive as "rotational" might be a bit of a stretch, but it does sound as though the motive removes itself from linear time. The repetition at hand does not sound "insistent" due to its quiet dynamic level

²⁹ James Hepokoski, *Sibelius: Symphony No. 5* (Cambridge: Cambridge University Press, 1993), 24.

³⁰ Caplin, *Classical Form*, 139.

³¹ Hepokoski, *Sibelius*, 23.

(*pianississimo* and *pianissimo*) and the temporal and registral distance between entries.³² The withdrawal effect is a result of the melodies' repetition and isolation. Overall, Example 2 does not present rotational tendencies because the development section tends less towards stream-of-consciousness and more towards rumination when compared with the exposition. The motive's repetition and isolation feed this affect.

Examples 6, 7a, and 7b explore how the development uses S-zone motives from fragmentation. Denisov's dense free micropolyphony in the exposition requires developmental fragmentation to balance the texture, and the fragmentation clarifies significant expositional motives. In other words, fragmentation extracts motives from the free micropolyphony in the exposition. Overall, the numerous secondary-parameter similarities between the free micropolyphony in Denisov's P and S zones affords unique challenges and opportunities for the development. The following discussion explores how instrumentation and melodic fragmentation create a cohesive development section.

Example 8a shows that the development includes extreme fragmentation of transitional material and quick alternation between instrument groups. Unlike in Example 6, Example 8a presents a more traditional type of fragmentation, where units from a melody are extracted or broken down and presented in a smaller form. Example 8b presents the beginning of the TR to provide context for Example 8a. Though the rhythms are faster, and many motivic entrances include more notes in Example 8a, this excerpt shows demonstrates fragmentation because each entrance possesses a shorter duration than in Example 8b: each entrance is one or two beats, instead of three. This is a result of Example 8a's rhythmic diminution, but nonetheless assists the fragmentation process.

³² Hepokoski, *Sibelius*, 23.



Example 8a. Edison Denisov, Symphony No. 1, I, mm. 196-201: Extreme fragmentation of TR materials and fast alternation between instrument groups also occur in Denisov's development. This example includes only one line from each iteration for clarity and simplicity.

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Example 8b. Edison Denisov, Symphony No. 1, I, mm. 69-72: The beginning of the TR. Again, this example includes only one line from each iteration for clarity and simplicity. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

Furthermore, Example 8a shows a typical relationship between fragmentation and fast

alternation between instrument groups. The shorter units of fragmentation lend themselves

well to fast alternation between instrument groups, so that these two developmental techniques often occur together. It is possible for fragmentation to occur without fast alternation between instrument groups, but fast alternation between instrument groups rarely occurs without fragmentation. Various instruments must get out of each other's way, so to speak, so that each fragmented iteration is clearly audible.

Example 9 shows how layering can occur. In this case, TR fragments (due to their faster rhythms and shorter iterations as discussed with Example 6a) occur with the P zone's B materials. These materials are marked primarily by instrument (percussion) and dynamic (*pianissimo*), but the slower rhythms in this excerpt also reflect those at the very end of the P zone.



Example 9. Edison Denisov, Symphony No. 1, I, mm. 205-207: Denisov's development includes layering between P and TR materials. Only one line of TR materials is shown for clarity and simplicity. Copyright © 1987 Première Music Group - Catalogue ALPHONSE LEDUC EDITIONS MUSICALES International Copyright Secured All Rights Reserved *Reprinted by permission of Hal Leonard LLC*

As discussed above, the development section of the first movement of Denisov's First Symphony extensively demonstrates fragmentation, layering, and fast alternation between instrument groups. These are common developmental techniques in late twentieth-century symphonic repertoire, and their continued employment in this repertoire demonstrates the importance of the development section to sonata form. Even as developmental processes could occur in other genres, composers continue to write developments in sonata-form movements, in other words, because it is an integral part of the historical sonata form, even if their updated versions eschew a variety of functionally-tonal keys.

Conclusion

This chapter argued that late-twentieth-century sonata-form development sections prioritize techniques such as fragmentation, layering, and fast alternation between instrument groups as the basis for its construction. Fragmentation, in turn, can very easily lead to faster alternation between various instrument groups. Layering occurs when a composer puts materials from different expositional zones into a contrapuntal relationship, which is less likely to occur in an exposition. The secondary-parameter network helps excavate how and where expositional materials occur in development sections—the mechanics of which will be discussed in the next chapter. Chapter 5 thus builds on the analysis just presented through its examination of how secondary parameters identify various techniques within the development section.

Analysis via the secondary-parameter network also detangles expositional micropolyphonic zones that initially appear (or sound) quite similar. As the twentieth century developed, musicians conceived of musical relationships in increasingly complex ways. The brief study of free micropolyphony above begins to illuminate another way in which composers thought about music. It seems likely that Denisov consciously developed free micropolyphony as an outgrowth of his second conservatory study of Ligeti's music, among that of other Western avant-garde composers. Schnittke's focus on the effects of micropolyphony is not insignificant because his definition affords composers greater flexibility in their interpretation and application of this concept—an approach that aligns with

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the perspective taken by the unofficial composers as they explored western avant-garde compositional techniques. It is possible that Schnittke and Denisov even discussed Ligeti's *Lontano*, as both were employed at the Moscow Conservatory while Denisov wrote this First Symphony, and Schnittke's study of Ligeti occurred during Denisov's second conservatory study. Regardless of how Denisov came to understand Ligeti's micropolyphony and what he knew about it, his reinterpretation of it in the first movement of his First Symphony offers a different perspective about the identity of a so-called musical object. The above chapter argued that analyzing secondary parameters can distinguish between different microcontrapuntal interthematic formal functions.

Chapter 5: Developmental Secondary Parameters (II) and the Developmental Trajectory in Rautavaara's First Symphony

This chapter argues that secondary parameters define the techniques that proliferate in late-twentieth-century development sections: compositional motions such as fragmentation, layering, sequencing and repetition, and faster alternation between instrument groups each have their own signature set of secondary parameters. While the previous chapter demonstrated how developmental techniques work, the present chapter focuses on how the secondary-parameter network elucidates these techniques through examination of the development section of the first movement of Einojuhani Rautavaara's First Symphony (1955-56/88). The following discussions extend the argument put forth in the previous chapter that the middle sections of late-twentieth-century sonata-form movements continue to function as development sections.

The present chapter also argues that Rautavaara's development section demonstrates a clear trajectory through the development section that seems to avoid what Rautavaara called "merely a variation mechanism."¹ Even though Rautavaara did not specify exactly what he meant by this term, one can surmise from the context of his comment (presented in full below) that he referred to the structure of development sections of earlier musical styles— quite possible, the classical and/or romantic eras. Through analysis, I show that Rautavaara's development section avoids large-scale repetition and, instead, possesses a stead buildup of energy from a quiet beginning to its retransitional climax. I argue that the secondary-parameter network captures a developmental trajectory that strives for "imagination and boldness" over "variation mechanism," to use Rautavaara's words.²

¹ Kalevi Aho, *Einojuhani Rautavaara as Symphonist* (Helsinki: Edition Pan, 1998), 86.

² Aho, *Einojuhani Rautavaara*, 85-86.

This chapter concludes by reassessing the status of Rautavaara's First Symphony with these contributions in mind. I argue that Rautavaara's First Symphony (in its revised form) deserves critical reception because it offers important illumination into composers' ongoing revisions on sonata form throughout the twentieth century.

This movement's history is vital to understanding its form. Rautavaara wrote his First Symphony while on scholarship to study composition in the United States, and it originally had four movements. Upon revising his First Symphony, Rautavaara decreased its scope to two movements with significant implications for its first movement, which was now a combination of the original first and third movements. Unfortunately, no copies of the original version exist today, so my discussion of its edits relies on study undertaken by Kalevi Aho. In what immediately follows, I provide some background information of Rautavaara's musical education before turning to the First Symphony's edits and establishing its sonataform structure. Then, I turn to the developmental matters discussed above.

The First Symphony: First Movement and Sonata Form

In the United States, Rautavaara attended two summer sessions at Tanglewood, where he studied with Sessions and Copland, and also studied with Persichetti at Juilliard.³ Rautavaara later said that Sessions's teaching focused on "overall structure of a work and its key (or at least tonal centre) relationships,"⁴ and that he found Copland highly inspirational.⁵ Rautavaara felt that he had to "make a break with everything that had affected my development during my years of study in Finland, I had to create a grand apotheosis."⁶ Aho

³ Barbara Blanchard Hong, *Rautavaara's Journey in Music* (Lanham, Maryland: Rowman and Littlefield, 2022): 19-23.

⁴ Samuli Tiikkaja, "Fortune's Fantasy," Finnish Music Quarterly 3 (2008): 10.

⁵ Erik Thomas Tawaststjerna, "Finnish Piano Music Since 1945" (PhD dissertation, New York University, 1982), 188.

notes the influence of Sibelius, Shostakovich, and Prokofiev in this symphony;⁷ Owen Burton identifies Rautavaara's characteristic "stylistic diversity" in his synthesis of these styles.⁸ Glenn Norman Koponen disagrees, stating that Rautavaara's multiplicity of styles marks his First Symphony as an immature work of his student years.⁹

However, Koponen wrote in 1980, when Rautavaara's First Symphony was still in its original four-movement form. Rautavaara also held negative opinions of the work: he did not like the form or clumsiness of orchestration.¹⁰ He revised the work in winter 1988 by truncating the first movement and "dovetail[ing]" this to the third movement—which required some orchestral, harmonic, and melodic adjustments—but the result was that "the two movements were now seamlessly lined into one extended slow movement."¹¹ Rautavaara chose to eschew the fourth movement completely to yield a two-movement symphony.¹² The First Symphony thus became "unquestionably what the work had 'wanted to be like' in 1956."¹³ Aho reveals the merge's location: "the join between the two original movements (bar 56) is only apparent from a comparison of the two scores. The theme in bars 56-72 is merely a variant of the second theme of the first main section (bars 21-33)."¹⁴ I will return to

⁶ Aho, *Einojuhani Rautavaara*, 76.

⁷ Aho, *Einojuhani Rautavaara*, 76.

⁸ Owen Burton, "Upholding a Modernist Mentality: Experimentalism and Neo-Tonality in the Symphonies of Einojuhani Rautavaara" (Ph.D. diss, University of York, 2020), 120.

⁹ Glenn Norman Koponen, "A Study of the Symphony in Finland from 1945 to 1975 With an Analysis of Representative Compositions" (Educat.D. dissertation, Columbia University, 1980), 58.

¹⁰ Aho, *Einojuhani Rautavaara*, 77.

¹¹ Aho, Einojuhani Rautavaara, 78.

¹² Aho, *Einojuhani Rautavaara*, 78.

¹³ Aho, Einojuhani Rautavaara, 78.

¹⁴ Aho, *Einojuhani Rautavaara*, 78.

Aho's comments after overviewing the (revised) first movement's sonata-form structure and exploring some of the implications of the original movements' merge.

Table 1 presents an overview for this movement's form based on the secondaryparameter network's findings. Rautavaara's edited first movement contains three major sections that correspond to exposition (mm. 1-89), development (mm. 89-136), and recapitulation (mm. 137-151). The development will be discussed in detail below, so it will suffice to say, for now, that it heavily relies on the developmental techniques discussed throughout the previous chapter: sequencing, layering, fragmentation, repetition, and faster changes of instrumental groups. The two excerpts in Example 1 show that the recapitulation presents a variation of expositional materials. While the recapitulation's instrumentation changes that of the exposition, the texture and rhythms are sufficiently consistent for the secondary-parameter network to flag the return of these materials. The bracket over m. 138 in the second excerpt identifies the flute's ornamentation; the recapitulation includes sparser accompaniment, but, otherwise, the melodies and their supporting material are consistent. Though the recapitulation may seem brief, it satisfactorily fulfills the requirement that something return in a recapitulation; its extreme brevity reflects Rautavaara's attitude towards recapitulations discussed in Chapter 2.

Exposition	-instrumentation: strings
P1: mm. 1-20	-tempo: Andante (eighth note = c. 92);
	slows to eighth note = 76 and, later, 66
	-time signature: changes—3/8, 5/4, 4/4, 2/4,
	etc.
	-rhythms: eight- and sixteenth- notes; thirty-
	second note runs
	-texture: homophonic (viola/cello melody
	with violin accompaniment)
	-dynamic: <i>forte</i>
P2: mm. 21-33	-instrumentation: woodwinds featured
	(oboe, clarinet, horn, bassoon)
	-tempo: eighth note $= 66$
	-time signature: changes continue

	-rhythms: primarily eighth and dotted-eighth notes; some thirty-second note flourishes -texture: mix of homophonic and contrapuntal (strings accompany) -dynamic: <i>mezzo-piano</i> , <i>piano</i>
TR: mm. 34-55	 -energy-gain: more instruments and higher range -instrumentation: more instruments used mm. 43: thicker orchestration (winds and strings) and higher range; m. 46: add horns; m. 50: full orchestra, high range maintained -tempo: eighth note = 76 (faster than P) -time signature: continues changing -rhythms: quarter and eighth notes, primarily; few sixteenth notes -texture: homophonic (violins accompany until m. 44; strings accompany after m. 44) -dynamic: gradually builds from <i>mezzopiano</i> to <i>fortissimo</i> (m. 38) -MC: m. 52 (stepwise melodic motion, long note in melody after stepwise motion; E pedal stops) -mm. 53-55: MC-fill (quieter dynamic level, sparser instrumentation, longer rhythmic values; motivic repetition; no new melodic/harmonic material)
S: mm. 56-78	Mm. 56-72: -instrumentation: solo flute, clarinet, and oboe; strings' accompaniment; add woodwind flourishes at m. 70 -tempo: eighth note = ca. 92 -time signature: mostly 3/4 (sometimes 5/4 and 4/4) -rhythms: eighth notes, eighth-note triplets, sixteenth notes in solo woodwinds; quarter, eighth, and sixteenth-notes in accompaniment -texture: homophonic -dynamic: <i>mezzoforte</i> and <i>mezzopiano</i> , increases to <i>forte</i> Mm. 73-78: -instrumentation: full orchestra -tempo: same -time signature: 3/4 -rhythms: quarter- and eighth- notes -texture: homophonic -dynamic: <i>fortissimo</i>

	 -EEC: mm. 77 (stepwise motion in top horn, horn rests; changes of instrumentation, texture, and dynamics) -m. 78: post-closure function (quiet dynamic level, no new melodic material; repeated notes/motive)
Closing zone: mm. 79-88	 -instrumentation: violin and cello duet; strings; flutes -tempo: quarter note = 76 -time signature: 4/4 -rhythms: quarter notes and eighth notes in violon and cello duet; whole and half notes in other strings; flutes' sixteenth notes) -texture: homophonic + flute flourishes (violins' melody; cello and bass accompaniment) -dynamics: <i>mezzo-piano, piano</i> -m. 88: closure (stepwise motion in solo violin; solo violin rests)
Development: mm. 89-136	 -m. 89: new tempo (eighth note = 66); change of instrumentation (strings); change of rhythms (dotted-sixteenth-note and thirty- second note motive); faster alternation between instruments; motive fragments and develops m. 93: faster tempo (eighth note = 120-124); contrapuntal texture (violins and viola/ woodwinds); <i>forte</i> dynamic level -m. 103: brass interjections, feature cello and bass (instrumentation); fragmentation in strings mm. 106-108: fragmentation through passing motives -mm. 110-111: imitative entrances in horns -m. 112-115: sequencing in violins -m. 115-119: faster alternation between instruments (oboe, clarinet, cello, bass) -m. 122: new instrumentation (whole orchestra), new texture (homophonic), layering, new tempo (eighth note = 108) -m. 129: fast alternation between strings/winds and brass/percussion; fragmentation -mm. 135-136: RT; strings' descent (also change in instrumentation), new time signature (5/4), new texture (homophonic), new dynamic (<i>mezzo forte</i>)

Recapitulation: mm. 137-151	-m. 137: S2 (from m. 79), but with flute solo -ESC: m. 147 -Coda: m. 147 Change in instrumentation (strings and horns); rhythm (sixteenth- dotted-eighth- sixteenth-note motive); different accompanimental gesture (violins' arpeggiated harmonics); change in tempo (half note = 72), quieter dynamics (<i>pianissimo</i>)
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 Table 1. The defining secondary parameters for the first movement of Rautavaara's First Symphony.





Example 1. Einojuhani Rautavaara, Symphony No. 1, I, mm. 79-82 and 137-139: An excerpt of the exposition returns in the recapitulation, fulfilling the requirement of return.

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Rautavaara's exposition includes three expositional zones: a transition (TR) separates the P and S zones. Examples 2a-2c preview the incipits of each formal function. Example 2a shows that the P zone opens with string instrumentation, homophonic texture, a *forte* dynamic level, and constantly changing time signature. P's tight-knit qualities include motivic unity and tendency towards symmetrical phrase groupings, as demonstrated by its three four-measure phrases. The TR retains many of these secondary parameters, but it incorporates energy-gain through fuller instrumentation at its start. Finally, S opens with string accompaniment and a woodwind trio—significant changes of instrumentation of texture from the end of the TR, and it also changes the time signature to a consistent 3/4. S's loose-knit features include its avoidance of closure at m. 73 (due to lack of rests in stepwise voices), its motivic variety, and asymmetrical phrase groupings (into seven-, ten-, and six-measure chunks) which hold ambiguous intrathematic formal function.



Example 2a. Einojuhani Rautavaara, Symphony No. 1, I, mm. 1-3: The P zone starts with string instrumentation and homophonic texture.





Example 2b. Einojuhani Rautavaara, Symphony No. 1, I, mm. 34-36: The TR's beginning demonstrates energy-gain through fuller instrumentation.

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Example 2c. Einojuhani Rautavaara, Symphony No. 1, I, mm. 56-60: The S zone opens with string accompaniment and includes a woodwind trio slowly unwinds. © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company.

However, Rautavaara's P zone is unusual in the fact that it contains two parts—in Hepokoski and Darcy's terms, it is "multi-modular."¹⁵ Example 3 shows that, at m. 21 (marked with an arrow), the instrumentation, dynamic, and texture change to yield a quieter woodwind trio with string accompaniment; usually, this change would signify the beginning of the TR, but the ensuing materials do not present any sort of energy-gain requisite for this formal function. Instead, the return to a homophonic texture, lower dynamic level, and sparser instrumentation rejects this notion. Another important clue is that stepwise melodic motion does not occur and, even though the horns do not continue past m. 20, their absence does not create sufficient space for a significant change of instrumentation; together, these factors indicate that no moment of closure is present at m. 21. As the trio continues, its texture evolves to a contrapuntal setting and its dynamic increases, but the TR does not begin until the instrumentation and texture change again at m. 34 (as shown in Example 2b). Aho's comment of the "second theme of the first main section" reflect this analysis.¹⁶

¹⁵ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006), 124.

¹⁶ Aho, *Einojuhani Rautavaara*, 78.



Example 3. Einojuhani Rautavaara, Symphony No. 1, I, mm. 20-22: Instrumentation and texture change at m. 21 to begin P's second module.

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Example 4a demonstrates secondary parameters change at m. 79. Instrumentation, texture, rhythms, and dynamics all change at this moment and thus establish it as a new section. The sudden changes of secondary parameters suggest that a moment of closure might be present, and the stepwise motion in the top voice (by then in the horns) and the absence of the horns (i.e., their rests) after the first beat in m. 79 corroborate this fact. Because S recently concluded, the excerpt that begins at m. 79 could be analyzed as part of the exposition (with the identity of closing materials) or as part of the development (as a transitional introduction or pre-core). Even though closing materials need not occur between S and the development, the m. 79 excerpt's presence requires it to belong to one or the other. This excerpt does not demonstrate qualities that a pre-core or transitional introduction exhibit, such as being "rhythmically discontinuous," or presenting an "incomplete thematic unit" and demonstrating before-the-beginning function, respectively.¹⁷ Additionally, its secondary parameters corroborate this analysis: its slowing into the development's tempo (eighth note = 66), quieter dynamic, and overall sparser instrumentation suggest that mm. 79-88 already possess a function of dissipating energy—a role which Caplin identifies as one belonging to the closing section.18

¹⁷ William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998), 151, 153, 147.

¹⁸ Caplin, *Classical Form*, 123.



Example 4a. Einojuhani Rautavaara, Symphony No. 1, I, mm. 76-81: texture, rhythms, and dynamics change to establish a new section at m. 79.

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Furthermore, Example 4b shows that an analogous excerpt occurs as the recapitulation, albeit with adjusted instrumentation and an ornamented version of the melody. Caplin states that a closing section "usually reappears in the recapitulation in much the same way as it did in the exposition."¹⁹ As discussed in Example 1, this return constitutes the recapitulation; if this return belonged to the coda, this movement would lack a recapitulation—a situation that has not arisen in any of the repertoire studied for this project. Though it might seem more likely for S materials to return after the development, a recapitulation can still fulfill its function as long as any materials from the exposition return. This was previously discussed in Chapter 2, in the context of the first movements of Rautavaara's Third Symphony and Lowell Liebermann's First Symphony, but revisiting this quality of recapitulations helps illuminate the role of mm. 79-88. Thus, these measures

¹⁹ Caplin, *Classical Form*, 171.
belong to the exposition.



Example 4b. Einojuhani Rautavaara, Symphony No. 1, I, mm. 137-141: The m. 79 materials return in the recapitulation.

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Having demonstrated how the edited first movement of Rautavaara's First Symphony demonstrates sonata form and discussed its exposition in detail, I will next turn to the structural implications of Rautavaara's merging of two separate movements into a single movement. To recall Aho's analysis of Rautavaara's merging of movements: "the join between the two original movements (bar 56) is only apparent from a comparison of the two scores. The theme in bars 56-72 is merely a variant of the second theme of the first main section (bars 21-33)."²⁰ For the present analysis, this means that the expositional P and TR zones are the only materials that originally belonged to the first movement; the S zone, development, and recapitulation are all from the original third movement. Table 2 summarizes these edits.

²⁰ Aho, *Einojuhani Rautavaara*, 78.

Original Movement Materials	Ι	III
Revised Movement Measures	P + TR	S + DEV + RECAP
Measure numbers (revised	m. 1-55	mm. 56-151
movement)		

Table 2. A summary of Rautavaara's merging of the First Symphony's original first and third movements.

Rautavaara's edits raise some intriguing questions about this movement's historicity that pertain to both the original and revised movements. Why could he make such substantial edits while preserving motivic integrity and musical coherence? How do these structural changes affect the movement's status as a sonata-form movement, assuming that both movements had their own dialogic relationships with the genre? What about Aho's analysis that "the theme in bars 56-72 is merely a variant of the second theme of the first section (bars 21-22)"?²¹ While the following discussion cannot provide definitive answers to these questions because the original score and recordings are not available, Aho's comments and the above analyses are well poised to provide some illumination. Ultimately, the most important fact is that Rautavaara elected to revise the first movement of his First Symphony, and I briefly explore the implications of his decision after pondering the questions posed by his revisions.

Rautavaara was able to pair his original first and third movements because, in Aho's words, "the two slow movements of the original version of Rautavaara's symphony had been thematically related in any case."²² Apparently, because Rautavaara employed similar motivic materials in both movements, it was relatively easy to combine the two. Aho also states that "the end of the first movement (which seems to run out of steam) and the brief finale (which comes dangerously close to banality) proved particularly problematic"; he does not mention the third movement.²³ Thus, Rautavaara's decision to rely on the bulk of the

²¹ Aho, *Einojuhani Rautavaara*, 78.

²² Aho, *Einojuhani Rautavaara*, 78.

²³ Aho, Einojuhani Rautavaara, 77.

original third movement for his revised first movement makes a certain sense: it was less problematic than other movements, as Aho did not mention any of its perceived deficiencies, so Rautavaara kept it.

His decision to retain so much of the original third movement and the original first movement's expense raises another question: how did the original first movement continue? The fact that the original third movement spans the revised movement's exposition, development, and recapitulation certainly seems to suggest that it had a strong relationship with the sonata genre. However, the P and TR zones of the revised movement cannot confirm a similar dialogue with the sonata genre for the original first movement, even if they might suggest it. No amount of information seems to be available about the original first movement's proportions; neither Aho nor Koponen-the two scholars who discuss the First Symphony-include details about its formal structure. While Aho's comment about "the second theme of the first main section" conform to my analysis of mm. 1-33 as the P zone,²⁴ it is possible that what I analyze as the TR in the context of the revised movement could have demonstrated a different formal function in Rautavaara's original movement. Koponen includes fewer details, indicating only that the symphony is in four movements.²⁵ Even if mm. 34-55 present the TR zone in Rautavaara's original first movement, the status of its S zone remains uncertain. The presence or absence of this formal function would greatly illuminate the original first movement's relationship with the sonata genre.

As it stands, the revised movement's S zone advances a different set of questions regarding its own dialogue with sonata form. If, as Aho states, "the theme in bars 56-72 is merely a variant of the second theme of the first section (bars 21-22)," then is this enough to

²⁴ Aho, *Einojuhani Rautavaara*, 78.

²⁵ Koponen, "A Study of the Symphony," 58.

qualify this movement as a type of monothematic sonata-form movement?²⁶ Chapter 6 develops the idea of a monothematic sonata form in greater depth, but it seems important to raise here. After all, Rautavaara's justification for merging his original movements was their shared motivic content. Regardless of the revised movement's status with respect to monothematicism, it seems clear that, overall, the revised first movement displays a number of characteristics consistent with sonata-form structure—despite its revisions—and that it is thus appropriate to consider this movement as possessing a sonata-form structure.

Regardless of how, exactly, the original first movement continued, Rautavaara's decision to revisit his First Symphony and execute such drastic alterations is revealing in itself. It enlivens sonata form so that, through its update, the movement becomes a living, breathing entity. More importantly, though, the fact that multiple versions exist provides direct evidence that Rautavaara literally rethought through his First Symphony—thus supporting my ongoing claim that composers continually remade and reinvented sonata form for the twentieth century. While composers could write in sonata form, intentionally or not, Rautavaara's updates that present a clear sonata-form structure strongly suggest that this genre remained a deeply entrenched musical entity with significant influence.

Developmental Techniques

Essentially, and in a manner congruent to that in which it operates in other sections of sonata form, the secondary-parameter network extracts changes in secondary parameters at the musical surface. Dora A. Haninnen's terminology from *A Theory of Music Analysis* helps excavate this process.²⁷ In her seminal work, she offers three domains (sonic, contextual, and

²⁶ Aho, *Einojuhani Rautavaara*, 78.

²⁷ Dora A. Hanninen, *A Theory of Music Analysis: On Segmentation and Associative Organizations* (Rochester, University of Rochester Press, 2012).

structural) that concern, respectively, psychoacoustic, musical objects, and theoretical realms.²⁸ As discussed in Chapter 1, secondary parameters embody the sonic domain and form-functional zones constitute the contextual domain for sonata-form expositions. When considering development sections, the orientation shifts slightly, so that secondary parameters remain the sonic domain but the contextual domain shifts to developmental techniques. Each entrance presents its own "coincidence" of secondary parameters that creates its unique secondary-parameter profile," which, as I will elaborate upon below, points to specific developmental techniques.²⁹ The secondary-parameter network's sonic criteria for defining each musical segment remains consistent—in Hanninen's words, the secondary parameters. The secondary-parameter network recognizes the changes to secondary parameters that come as a byproduct of developmental techniques.

The coincidence of secondary parameters defines each "segment" within the development, and all segments are also "phenosegments" because they all have numerous secondary parameters.³⁰ The preceding chapter's discussion of developments demonstrated that a limited number of developmental techniques occur in late-twentieth-century sonata-form developments. When the orientation shifts so that each phenosegment becomes the sonic domain and the developmental techniques become the contextual criteria, the secondary parameters at play help identify these techniques because specific secondary parameters tend to congregate with designated techniques. In this analysis, a development section becomes an "associative set" where multiple phenosegments are "interrelated and integrated by

²⁸ Hanninen, A Theory of Music Analysis, 5-7.

²⁹ Hanninen, A Theory of Music Analysis, 11, 12.

³⁰ Hanninen, A Theory of Music Analysis, 11-12.

contextual criteria into a system at a higher level of organization."³¹ However, the initial analysis of developmental techniques does not create an "associative landscape" because there is no overarching "temporal context" or order for developmental techniques.³² My discussion of the trajectory of the Rautavaara's development does create an associative landscape because it hinges on the order of excerpts throughout this section.

The following analysis reveals how some secondary parameters (such as instrumentation, texture, rhythm, and dynamics) are more important in parsing developmental techniques than others. The secondary-parameter network can identify various developmental techniques—fragmentation, repetition, sequencing, layering, and faster alternation between instrument groups—because it is sensitive to the interactions between consecutive moments in music. In this regard, the secondary-parameter network can account for developmental techniques.

Instrumentation is a particularly important secondary parameter in developments, as changes to instrumentation identify faster alternation between instrument groups, but it also can also help distinguish between different iterations of sequencing and layering. Changes to texture can indicate layering, and fragmentation, and the consistency of rhythms and dynamics can indicate sequencing, layering, and repetition. Table 3 summarizes which secondary parameters signify the developmental techniques discussed in this dissertation. By observing the interactions between these and other secondary parameters, the secondaryparameter network identifies the structure of a sonata-form movement's development.

³¹ Hanninen, A Theory of Music Analysis, 12.

³² Hanninen, A Theory of Music Analysis, 12.

Developmental Technique	Secondary Parameters	
Repetition	Instrumentation (consistent)	
	Rhythms	
	Time signature/meter	
	Dynamics	
Sequencing	Instrumentation (consistent)	
	Rhythms	
	Dynamics	
Layering	Instrumentation (changing)	
	Texture	
	Rhythms	
Fragmentation	Instrumentation	
	Texture	
Faster Alternation Between	Instrumentation	
Instrument Groups		

Table 3. The relationships between secondary parameters and developmental techniques.

The following discussion examines the relationship between the secondary-parameter network and these developmental techniques, and how some combinations of developmental techniques work well together. This chapter discusses each developmental technique individually and assesses some interactions between developmental techniques along the way. For example, repetition, layering, and sequencing are discussed before fragmentation. Fragmentation lends itself well to literal repetition and sequencing, so instances of both techniques are discussed with fragmentation. While literal repetition and sequencing both occur as developmental techniques, the secondary-parameter network's mechanisms define them in the same way. Faster alternation between instrument groups can be an outcome of fragmentation, so this chapter considers the relationship between these two techniques last.

Before becoming too deeply ensconced in the discussion of developmental techniques in the late twentieth century, it is worth pausing to note that previous scholarship on classicalera sonata forms does include developmental aspects other than pitch and harmony. In Caplin's theory of formal functions, on the one hand, the development "features a looser organization" than the preceding exposition and emphasizes "sequential progressions."³³ The

³³ Caplin, Classical Form, 139.

main part of the development is often the core, which often has a "marked increase in rhythmic activity" and employs polyphonic devices to help create a complex musical texture.³⁴ The core presents a relatively lengthy model that is subsequently sequenced at least once. Fragmentation "breaks down the grouping structure defined by the model (and its sequences)."³⁵ If a model and its sequencing and fragmentation are not present, a development section has a "pseudo-core" instead of a core.³⁶ Developmental materials "normally" originate in the exposition.³⁷

On the other hand, for Hepokoski and Darcy, developments are fundamentally rotational in nature because their modules very frequently appear in the same order in which they appeared in the exposition, even if not all developments are literally rotational.³⁸ Developments that focus on P and TR are more common than those based on S and C, and this might relate to the fact that P usually receives a development's first treatment, followed by the TR, and then S or C.³⁹ Hepokoski and Darcy stipulate various types and extents of rotations and allow for the possibility of interpolated episodes into a development's underlying rotational structure. Rotations offer the underlying structure of a development section, in which developmental techniques (including modulations, references to expositional materials, sequences, and contrapuntal treatment) occur. Developments generally have four zones: "a short, optional link" from the exposition's end to the development's beginning; an optional "entry or preparation zone" that prepares for the

³⁴ Caplin, *Classical Form*, 142.

³⁵ Caplin, Classical Form, 144.

³⁶ Caplin, Classical Form, 155.

³⁷ Caplin, Classical Form, 139.

³⁸ Hepokoski and Darcy, *Elements of Sonata Theory*, 206-207.

³⁹ Hepokoski and Darcy, *Elements of Sonata Theory*, 205-206.

required "central action or set of actions" in which sequence-blocks are likely to occur; and the "exit or retransition" that prepares for and foreshadows the upcoming recapitulation.⁴⁰ Late twentieth-century sonata-form movements generally follow these trends in which the developmental techniques discussed below accumulate in hierarchic structures to create core and/or zones.

Example 5 presents one example as to how the secondary-parameter network identifies repetition in the development of Rautavaara's First Symphony. The strings' descending motive that first occurs in m. 89 returns in mm. 90-91 and in m. 92. An arrow marks each iteration in Example 5. Even though it is heard at different octave levels (starting on C\$6, C\$5, and C\$3, respectively), the secondary-parameter network identifies the consistent rhythms, instrumentation, and meter in this excerpt. Time signature would seem to play an important role in this example of repetition, as the excerpt remains written in 4/4 but the strings can be interpreted to play in 3/4 or 3/2. To my ear, the F-Bb motion in the cello and bass on the third and fourth beats of m. 89 emphasizes the Bb to sound more like a downbeat than a mid-measure beat, so Example 5 includes the 3/4 counting interpretation above the staves. (This reading has the added benefit of defining a two-measure basic idea that is then repeated an octave lower in mm. 90-91). The secondary-parameter network corroborates the idea of the repetition of the strings' descending motive in mm. 89-92 through secondary parameters.

⁴⁰ Hepokoski and Darcy, *Elements of Sonata Theory*, 229-230.



Example 5. Einojuhani Rautavaara, Symphony No. 1, I, mm. 89-92: Repetition occurs in the strings' descending motive.

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The same secondary parameters discussed above help identify repetition in the brief interjections by the winds and brass, respectively, in mm. 90 and 91. Both of these interjections are circled in Example 5 and possess consistent rhythm and time signature with the strings' repetition. The secondary-parameter network notices the rhythmic consistency of these two segments and how they both fall into corresponding beats of the 3/4 time signature. Even though the instrumentation is inconsistent, the fact that instruments other than the strings enter is significant because it flags the woodwinds' and trumpets' entrances as the beginnings of new segments. Additionally, the flutes and oboes interject in the G5-E6 range and the trumpets respond in the G4-E5 range to maintain repetition at the octave established by the violins. Thus, rhythms, instrumentation, and time signature are important secondary parameters in establishing how repetition occurs in Example 5.

Literal repetition is only one type of repetition that can occur in music. Sequencing occurs when a chunk of music is repeated at varying pitch levels. Even if the secondary-

parameter network does not distinguish between literal or sequential repetition because it avoids discussion of pitch, it relies upon rhythms and instrumentation to identify instances of both types of repetition. Example 6 presents one instance of sequencing in Rautavaara's development; the brackets outline the model and three copies that occur in this example. The secondary-parameter network identifies the consistent rhythmic pattern of alternated dotted eighth notes and thirty-second notes. While contour is not necessarily a distinguishing secondary parameter in other instances, it is helpful in this case-particularly for the ascending scalar segments and descending leaps. The downward leaps are especially important because they indicate the beginning of a new segment of repetition. In other words, the secondary-parameter network identifies each iteration of the sequence by its rhythms and contour. Additionally, the consistent instrumentation assists in confirming this excerpt's identity, as sequencing is more likely to occur without changes of instrumentation. As seen in the previous two examples, rhythms and instrumentation are vital to the secondary-parameter network's identification of repetition, whether literal or sequenced. In terms of the development section as a whole, the important point is that repetition occurs, with concomitant fragmentation that will be discussed below.



Example 6. Einojuhani Rautavaara, Symphony No. 1, I, mm. 97-98: Sequencing occurs in the upper strings. Violin II plays a semitone lower than Violin I, so this example shows only the Violin I part for simplicity. © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

The next example explores how layering occurs. Layering occurs when multiple musical events, which were previously independent, occur simultaneously. In Ben Duane's terms, multiple "textural strands" are present, where "textural strands" are "the lines (or groups of lines) that make up the texture.^{*41} Layering includes Jennifer Beavers's "auditory scenes," which are "musical events composed of one or more auditory streams.^{*42} The key aspect of layering is that each textural strand or auditory stream could stand as a melody to a homophonic texture, so that, by design, layering will result in some sort of contrapuntal texture. Duane writes that "imitative and otherwise contrapuntal textures appear more often in transitional and developmental sections than in thematic ones. The opposite is true of simpler homophonic textures.^{*43} Of course, Duane focuses on eighteenth- and nineteenth-century keyboard, but this dissertation's previous chapters show that late twentieth-century repertoire largely follows earlier conventions.

Example 7 presents an example of layering where three successive entrances use imitation to create a contrapuntal texture; arrows mark each entrance. Even though the idea of layering has thematic origins, the secondary-parameter network identifies each entrance based on its own profile of secondary parameters. To invoke Hanninen's vocabulary, each entrance presents a new segment based on the changing criteria of instrumentation.⁴⁴ The first entrance uses the flutes and maintains the double-dotted eighth note and thirty-second note rhythmic profile for the four beats before lapsing into half notes. The second iteration changes instrumentation to the horns and uses the rhythmic motive for two beats at the beginning; after a half note, it returns to the double-dotted rhythm. The third iteration, again in a horn, uses only the double-dotted rhythm for four beats (not including its pick-up); the layering breaks to a new section that begins in m. 112. Even though all incipits use the same

⁴¹ Ben Duane, "Thematic and Non-Thematic Textures in Schubert's Three-Key Expositions," *Music Theory Spectrum* 39, no. 1 (Spring 2017): 36-65.

⁴² Jennifer P. Beavers, "Ravel's Sound: Timbre and Orchestration in His Late Works," *Music Theory Online* 27, no. 1 (March 2021): 2.3. "Auditory streams" are "musical lines that can be grouped together as a single musical idea" (2.3).

⁴³ Duane, "Thematic and Non-Thematic Textures,": 39.

⁴⁴ Hanninen, A Theory of Music Analysis.

rhythms, the different rhythms after the first several notes are key in creating the ongoing layering in this excerpt. Additionally, the fact that all entrances enter with the same dynamic level (*mezzo-forte*) indicates their textural equality, and the timbral differences between flutes to horns help distinguish their entrances—two factors that furthermore confirm the layering in Example 7.



Example 7. Einojuhani Rautavaara, Symphony No. 1, I, mm. 109-111: Layering occurs between the flutes and horns.



Fragmentation—the shortening of unit lengths—also occurs in late twentieth-century symphonic development sections,⁴⁵ and the secondary-parameter network can help identify this developmental technique as well. The brackets in Example 8 show that the double-dotted rhythmic motive occurs eleven times in mm. 129-133. The secondary-parameter network recognizes each entrance as its own iteration because the instrumentation consistently alternates between descending winds and strings and ascending brass. While each entrance has four beats to span the double-dotted motive and a half note, the next entrance begins on each half note, so that the rhythmic motive occurs on the second and fourth beat of each measure. When paired with the oscillating instrumentation and compared with previous instances where the double-dotted rhythmic motive was present, the secondary-parameter identifies fragmentation in Example 8 because the motive typically occurs in in a longer

⁴⁵ Caplin, *Classical Form*, 255.

auditory stream, such as in Examples 5, 6, or 7. The secondary-parameter network excludes the trumpet's iterations of the double-dotted motive in mm. 131 and 133 for a related reason: these iterations occur within their own auditory stream and thus do not participate in the fragmentation process.



Example 8. Einojuhani Rautavaara, Symphony No. 1, I, mm. 129-133: Fragmentation occurs as Rautavaara presents the motive at two-beat intervals. Example 8 includes only the first of four horn lines for simplicity. © Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin

In Example 8, the secondary-parameter network also helps identify repetition. In addition to its observations of instrumentation and motivic frequency discussed above, both sets of instruments (winds and strings, and brass) repeat most iterations of the motive twice before moving to a higher pitch level. The stars in Example 8 indicate when the pitches move up by step in every other iteration of repetition, to usually result in two statements at each pitch level; the exception is the brass's first statement of the motive in m. 129. Literal repetition occurs within sequential repetition. The secondary-parameter network extracts each iteration (whether literal or sequential) through instrumental and rhythmic factors.

The above discussion explored how the secondary-parameter network identifies common developmental techniques in late twentieth-century symphonic repertoire: repetition, sequencing, layering, fragmentation, and faster alternation between instrument groups. The next part of this chapter will consider how secondary parameters create a developmental trajectory from a quiet beginning to the movement's climax.

Developmental Trajectory

Rautavaara shared his impressions of sonata from:

"While still a student in formal analysis classes, I was genuinely astonished at the glee with which the teacher greeted the recapitulation or demonstrated how every detail of the development had its origin in the themes presented in the exposition...And the development seemed merely a variation mechanism. The return home is undoubtedly an archetype. But I expected more imagination and boldness from the prodigal son as a matter of course. The journey that does not lead into the great unknown is not worth making, at least in art."⁴⁶

Even though he made this comment some years after his studies, Rautavaara reveals his dissatisfaction with the operation of a development. While it may be impossible to know which pieces Rautavaara studied during his academic education, a brief survey of the main literature on developments does suggest the origin of his discontent. After discussing some of Caplin's and Hepokoski and Darcy's thoughts on the structure of developments and scholarship by David Beveridge and Nathan Kroms Davis on developmental relaxation, I turn to the evocative nature of Rautavaara's comment to consider alternative organizational strategies for the development of the first movement of his First Symphony. Instead of prioritizing zones or core, Rautavaara seems to focus on a sustained drive towards a single climax—one which avoids any sort of large-scale sequencing (such as that occurs in Caplin's core technique) or rotations (in the way described by Sonata Theory). In other words, Rautavaara's reflections and the findings of my analysis with the secondary-parameter network suggest that he organized his development so that it points towards one central

⁴⁶ Aho, *Einojuhani Rautavaara*, 85-86.

moment of climactic action. The following discussion explores how Rautavaara may have sought to avoid employing so-called "variation mechanism[s]" in his development, even though (as discussed above) developmental techniques such as sequencing, layering, fragmentation, and repetition constitute this section. I argue that a teleological trajectory towards mm. 129-133 is a main strategy to avoid what Rautavaara might perceive to be developmental triteness.

For Caplin, the development is marked by its location "between an exposition and a recapitulation."⁴⁷ It has two main parts: the pre-core and core. The pre-core tends to be "hesitant and anticipatory," with a "soft" dynamic level and discontinuous rhythmic motion.⁴⁸ The core is where the bulk of the developmental processes occur, with "an emotional quality of instability, restlessness, and dramatic conflict"; a dynamic level of "usually forte"; and includes "a marked increase of rhythmic activity" and polyphonic devices that "contribute further to the complexity of the musical texture."⁴⁹ Extensive reliance on the model-sequence technique is vital to the core's identity, without which a development section includes a "pseudo-core" in the core's stead.⁵⁰ Most development sections, however, include both precore and core sections.

Hepokoski and Darcy employ the concept of "zones" to dissect development sections in Sonata Theory. The first zone is a "short, optional *link*" from the end of the exposition, and the second zone is the "entry or preparation zone."⁵¹ Though Hepokoski and Darcy allow some variation for the entry zone, it often has a *piano* dynamic level.⁵² Their third zone

⁴⁷ Caplin, *Classical Form*, 139.

⁴⁸ Caplin, Classical Form, 147-151.

⁴⁹ Caplin, *Classical Form*, 142.

⁵⁰ Caplin, Classical Form, 155.

⁵¹ Hepokoski and Darcy, *Elements of Sonata Theory*, 229.

⁵² Hepokoski and Darcy, *Elements of Sonata Theory*, 229.

consists of the "central action or set of actions," which may rely on "sequence-blocks" of various sizes and "may be expanded at considerable length."⁵³ This zone may also include "surging restlessness; moves to minor; *Sturm und Drang* outbursts; quieter, reactive moments; special-effect episodes; and so on."⁵⁴ The fourth and final zone is the "exit or retransition" that prepares for the recapitulation.⁵⁵ Hepokoski and Darcy allow for slow-movement episodes within movements of a faster tempo that originated from the eighteenth-century da capo overture, though they do not elaborate on how a slow-movement development might fulfill the requirements for their various zones.⁵⁶

In sum, though Caplin and Hepokoski and Darcy provide two different methods to parse sonata-form developments into multiple sections, they agree that these sections often begin quietly. While Caplin allows that the core section likely possesses a loud dynamic, Hepokoski and Darcy designate it as a time of increased turmoil. Was this the "mere[] variation mechanism" with which Rautavaara took issue?⁵⁷ What is striking is that both approaches do not account for an overall trajectory through the development section, and their reliance on large-scale sequencing would seem to preclude this sort of strategy. Having discussed the sectional taxonomy of two different approaches to developments, I will now consider how scholars have addressed relaxation in earlier development sections. The following discussion demonstrates that alternative approaches to the development section were possible; after this discussion, I will examine Rautavaara's contributions to this topic.

⁵³ Hepokoski and Darcy, *Elements of Sonata Theory*, 230.

⁵⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 230.

⁵⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 230.

⁵⁶ Hepokoski and Darcy, *Elements of Sonata Theory*, 221.

⁵⁷ Aho, *Einojuhani Rautavaara*, 85-86.

David Beveridge was the first to analyze moments of repose in Brahms's developmental sections,⁵⁸ but Nathan Kroms Davis offers a label and definition for this phenomenon.⁵⁹ "Developmental stasis" is contextual in that its "foreground exhibits characteristics of stasis in greater measure than foregrounds of the corresponding exposition and recapitulation," and it can be defined by a number of secondary parameters: "slow tempo, slower harmonic or absolute rhythm, soft dynamics, transparent texture, or slow progressions of events including harmonic and linear motion."⁶⁰ A development that contains stasis retains developmental function because it includes requisite tonal and harmonic markers and employ themes from the preceding exposition, but it will perform these tasks at a slower tempo, with softer dynamics, thinner instrumentation and texture, etc. In other words, developmental function does not depend on qualities of energy or stasis in a given development section.

In not so many words, Davis argues for the changing developmental norms that include developmental stasis as a lower-level compositional default that ascends in prominence through time in his survey of how Haydn, Mozart, Beethoven, Mendelssohn, and Schumann employed developmental stasis to demonstrate its use across previous centuries. Rather than offering a deformational scenario, Brahms's developmental stasis offers alternative accomplishments for this section of music.⁶¹ Davis examines Brahms's Fourth Symphony, Op. 98, and Third String Quartet in Bb-major, Op. 67, in particular detail.

Beveridge, in comparison, focuses on a handful of Brahms's development sections, and argues that his developments are often "point[s] of relative repose" when compared with

⁵⁸ David Beveridge, "Non-Traditional Functions of the Development Section in Sonata Forms by Brahms," *The Music Review* 51, no. 1 (February 1990): 25-35.

⁵⁹ Nathan Kroms Davis, "Stasis in the Development Sections of Two Sonata Forms by Brahms," (PhD diss, University of California Davis, 2007).

⁶⁰ Davis, "Stasis in the Development Sections," 6.

⁶¹ Davis, "Stasis in the Development Sections," 52-53.

the surrounding exposition and recapitulation.⁶² His overarching goal is to reconsider Brahms's fidelity to classical forms, and he identifies the Brahms's development sections one way into this reexamination. Even though scholars have studied Brahms's developmental techniques (such as Walter Frisch's *Brahms and the Principle of Developing Variation*), they focus on exposition sections.⁶³ Beveridge identifies four techniques that Brahms uses to create repose in his development sections: "the use of slower *tempt*"; "return to the principal theme in the tonic at the beginning of the development"; "a tendency toward tonal stability" of non-tonic keys; and "a tendency to present themes in full form, rather than using the techniques of fragmentation that characterize Classical developments."⁶⁴ His employment of case studies focuses on Brahms's Third String Quartet in Bb-major, Op. 67, but includes his Clarinet Quinet in B-minor, Op. 115 and Third Symphony, Op. 90 (the latter of which he compares with the Violin Concerto, Op. 77).

One of the main differences between the points of view discussed above is that Davis frequently extracts excerpts of developmental stasis while Beveridge allows whole developmental sections to be calm. Beveridge presents several excerpts from his main case study, the first movement of Brahms's String Quartet in Bb-major, and each example shows how the development of this piece's first movement avoids traditional developmental rhetoric and function. The development begins with slower rhythmic values, softer dynamics, and a thinner homophonic texture than the preceding exposition's conclusion; extended passages have tonal stability; and the retransition presents decreasing dynamic levels and concludes

⁶² Beveridge, "Non-Traditional Functions": 26.

⁶³ Beveridge, "Non-Traditional Functions": 26-27.

⁶⁴ Beveridge, "Non-Traditional Functions": 27.

with a fermata.⁶⁵ Beveridge interprets these qualities as presenting non-traditional developmental function in this movement.

In contrast, even though Davis's definition would seem to allow a whole developmental section to be static, he primarily focuses on excerpts from most development sections. In his survey of historical developmental stasis, he identifies that Haydn's use usually occurs "near the ends of developments," that Mozart's "episodes of developmental stasis generally emerge earlier" to start the development with a new theme, and that Beethoven's use of developmental stasis is significantly more varied than that of either of his predecessors.⁶⁶ Indeed, Davis identifies Beethoven as the only composer who wrote wholly static developments.⁶⁷ It would thus seem that Davis's historical analysis restricts the normative use of developmental stasis to sections in an otherwise high-energy development.

Davis's comments underscore an important nuance between his definition and application of developmental stasis. According to his definition, moments (or sections) of developmental stasis do not necessarily preclude developmental function, and his criticisms of Beveridge's analysis of Brahms's Third String Quartet, Op. 67, amplify this message. In writing about the opening of the development in the first movement, Beveridge identifies the "hesitant starts" that seem to propose a "normal development" which is then "summarily reject[ed]" in favor of a new, stepwise, melodic theme.⁶⁸ Davis finds the "faster harmonic rhythm, the new, mysterious *sotto voce* texture of mm. 106-114, and these measures' incipient voyage beyond the primary key areas" to be a "point of departure ripe with potentialities."⁶⁹ For Davis, then, developmental function can be present alongside

⁶⁵ Beveridge, "Non-Traditional Functions": 29-32.

⁶⁶ Davis, "Stasis in the Development Sections": 11, 13, 15.

⁶⁷ Davis, "Stasis in the Development Sections": 15.

⁶⁸ Beveridge, "Non-Traditional Functions": 30.

developmental stasis. As Caplin puts it, the label "development" "can refer to both a particular section of a movement and a distinct formal function."⁷⁰ A development that heavily features stasis just needs to use developmental techniques in different ways to remain static.

In summary, Beveridge believes that Brahms's developments do not always have traditional developmental function, but Davis identifies developmental stasis as a viable compositional option for a sonata-form movement's development section. Together, these scholars demonstrate how Brahms created novel strategies for his development sections; their work suggests that other composers, if interested, could also brainstorm and incorporate their own strategies. This dissertation builds on Beveridge's and Davis's work by examining another way in which composers might employ secondary parameters with low salience within the developmental formal function. While Rautavaara's development does not take breaks, as does those studied by Beveridge and Davis, I suggest that the development's lowenergy opening allows for its dynamic build up to a climax in mm. 129-134. The following discussion explores exactly how the development builds up from a place of decreased energy. The secondary-parameter network helps identify tension-diffusing techniques discussed by both Beveridge and Davis in Rautavaara's music-discussion of stable key areas is not highly relevant, but their discussions of slower tempo, performance markings, rhythms, and dynamic (Beveridge) and note values, harmonic rhythm, and texture (Davis) show that secondary parameters are of paramount importance to defining decreased energy in music.⁷¹

Table 4 shows the progress of relevant secondary parameters in the development section of the first movement of Rautavaara's First Symphony. This table takes tempo as an

⁶⁹ Davis, "Stasis in the Development Sections": 60.

⁷⁰ Caplin, *Classical Form*, 139.

⁷¹ Beveridge, "Non-Traditional Functions": 27, 30, 31, 35; Davis, "Stasis in the Development Sections": 5.

organizing factor, in that it only includes new sections (so to speak) as defined by tempo, and each example provides an excerpt from that section. It shows how secondary parameters lend a lower energy affect to the development's beginning, with its slow tempo, quiet dynamic level, and homophonic texture; and progress through increased instrumentation, louder dynamic level, faster tempo, and more complex contrapuntal texture to the climax. The secondary parameters included in Table 4 (tempo, dynamics, texture, instrumentation, and rhythms) primarily contribute to the effect of a low-energy development because they have the most direct effects on energy perception: music with a faster tempo, louder dynamics, thicker texture, more instruments, and varied rhythms is heard as being more exciting than music with a slower tempo, quieter dynamics, thinner texture and instrumentation, and consistent rhythms. Time signature, the one secondary parameter omitted by this chart, has less impact on an excerpt's energy level, if any, though it might be more important to energy level if an asymmetrical meter is involved.

Measure:	89	93	122	135
Developmental	Pre-Core; Zone	Core; Zone3	Core; Zone 3	Retransition;
Function	2			Zone 4
Example	Example 5	Examples 6	Example 8	
		and 7	(climax)	
Tempo:	66	120-144	108	80
(given in				
eighth-note				
value)				
Dynamic	Pianissimo,	Forte, mezzo	Fortissimo	Mezzo forte to
	with crescendo	forte		mezzo piano
Texture	Homophonic	Contrapuntal	Homophonic	Homophonic
Instrumentation	Strings,	Strings, winds,	Whole	Strings, horns
	tympani, flutes,	tympani, horn	orchestra	
	trumpets, and		(strings'	
	low winds		melody)	
	interject			
Rhythms	<u></u>	<u></u>	Eighth notes in melody:	
	Whole, half,	Whole and half	quarter notes in	Half and
	and quarter	notes in	accompaniment	quarter notes in
	notes in	accompaniment	a compania a company	accompaniment
	accompaniment	-		

Table 4. The progressions of relevant secondary parameters in the development section of the first movement of Rautavaara's First Symphony.

A key quality of Rautavaara's development is that all changes occur gradually: even though differences in secondary parameters may be vast, Rautavaara generally smooths disjunctions through similarities and gradual changes. Table 4 provides some of this information, but the following analysis explores Rautavaara's dynamic development in greater detail. If Examples 5 and 8 present, respectively, the moments of least and most salient secondary parameters with their roles as the development's beginning and climax, then any excerpt from the mediating measures could be employed as a stepping stone between the two examples. The following discussion presents two examples with which the reader is already familiar—Examples 6 and 7—as intermediaries between the two extremes witnessed by Examples 5 and 8. I use the secondary-parameter network to trace the progression from secondary parameters with low salience that create a low-energy effect (such as slow rhythms and/or tempo, quiet dynamics, and sparse instrumentation) to those with high salience to create the movement's energetic climax throughout these examples.

Example 9 reproduces Example 5. The opening measure of this excerpt, m. 89, overlaps with the moment of closure discussed at the end of the closing zone (see Example 4b), rendering Example 9 to be the incipit of the development. In other words, Example 9 presents the development's pre-core, to borrow Caplin's terminology, or zone 2, to employ Hepokoski and Darcy's term. As such, its initial, quiet dynamic marking of *pianissimo* fits with their prescriptions. Example 9 includes a number of additional secondary parameters that create its low-energy state: it has a slow tempo (eighth note = 66); its rhythms are not particularly fast, despite the double-dotted rhythmic motive's presence; and its harmonic rhythms are quite slow, with two or four beats per harmony. Additionally, it includes a relatively thin instrumentation of strings, and the brief wind/brass interjections do not collide with the violins' melody. The texture is, overall, homophonic. All of these secondary parameters contribute to the development's low-energy opening.



Example 9 (reproduction of Example 5). Einojuhani Rautavaara, Symphony No. 1, I, mm. 89-92: tempo, slow rhythms and harmonic rhythms, thin instrumentation, and homophonic texture contribute to the development's low-energy opening.

© Fennica Gehrman Oy, Helsinki Reproduced by permission of Boosey & Hawkes company. Solely for the use by Anne Delfin Example 10, a reproduction of Example 6, shows how an excerpt shortly after the development's opening already begins to display increased energy through secondary parameters. The core or zone 3 begin with the tempo change in m. 93, and the faster tempo is one key secondary parameter that factors into Example 10's increased energy. Its louder dynamic is also important towards the development's overall trajectory towards the climax. Example 10 also includes several consistencies from Example 9 that create a smooth course towards the climax: it relies on similar rhythmic values, instrumentation, homophonic texture, and harmonic rhythm. While the faster tempo and louder dynamic begin to move towards a state of greater musical energy, the retained musical parameters ensure that it does not move too quickly and that the rest of the development has room to grow, so to speak.



Example 10 (reproduction of Example 6). Einojuhani Rautavaara, Symphony No. 1, I, mm. 97-98: A faster tempo and louder dynamic provide more energy, but the rhythms, instrumentation, texture, and harmonic rhythm remain consistent from Example 9. (Violin II plays a semitone lower than Violin I, so this example shows only the Violin I part for simplicity.)

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Example 11 provides a second example from slightly later in the core/zone 3. This excerpt retains the faster tempo; other higher-energy secondary parameters include its contrapuntal texture (Example 7 discusses how the flutes' and horns' entrances create layering). While its dynamic marking is a *mezzo-forte*, which would not seem to lend a particularly large amount of energy to this passage, the double-dotted rhythmic motive's instrumentation and ascending contour are important here, because they allow access to higher registers than seen in the previous two examples. By selecting flute and horn, rather

than, for example, bassoon and horn, the motive's inversion sends Example 11's range higher than that seen in Examples 9 and 10. Additionally, Example 11's harmonic rhythm tends to be slightly faster than that of the two previous developmental examples, in that it includes both half notes and quarter notes. Even though it includes several important markers of increased energy, Example 11 retains several characteristics from the previous examples namely, thin instrumentation and rhythmic values.



Example 11 (reproduction of Example 7). Einojuhani Rautavaara, Symphony No. 1, I, mm. 109-111: A faster tempo, contrapuntal texture, and higher range lead to increased energy, while rhythms and harmonic rhythms remain consistent from previous examples.



Example 12 reproduces Example 8 and presents the development's climax, which remains in the core/zone 3. Simply put, Example 12 includes the highest number of salient secondary parameters. As part of the core/zone 3, it retains the fast tempo. It also possesses the loudest dynamic at *fortissimo*, densest instrumentation through its employment of the whole orchestra, and a contrapuntal texture. Its only low-energy features are its slow harmonic rhythm (harmonies change every two measures) and its use of the double-dotted rhythmic motive. Even though not all secondary parameters contribute to the climax as such, the excerpt in Example 12 nevertheless demonstrates the greatest amount of number of aggressive secondary parameters throughout the whole movement.



Example 12 (reproduction of Example 8). Einojuhani Rautavaara, Symphony No. 1, I, mm. 129-133: The climax of the development displays high energy through a fast tempo, loud dynamic, dense instrumentation, use of the whole orchestra, and contrapuntal texture. (Example 12 includes only the first of four horn lines for simplicity.)



Even though Rautavaara's comments on sonata form are highly suggestive and would seem to insinuate that he sought out some sort of alternative developmental strategy, my research has not yielded any commentary by Rautavaara on his First Symphony to support this position. Thus, my argument is limited to analysis of Rautavaara's development section. Even though the secondary-parameter network analyses clear growth across the trajectory of the whole development for one central climax before recapitulatory return, I cannot claim that Rautavaara consciously decided to execute a new strategy for this section.

This said, previous accounts of development tend to focus on large-scale sequencing techniques or rotational issues, so the fact that the secondary-parameter network offers a new perspective suggests that Rautavaara's development section is at least somewhat novel or unusual.⁷² Damien Blättler, however, identifies alternative processes that developments could undergo to achieve a "different form of recapitulatory transformation," but these processes

⁷² Caplin, *Classical Form*, 142-144; Hepokoski and Darcy, *Elements of Sonata Theory*, 206-212.

point towards the recapitulation, not the end of the development.⁷³ The secondary-parameter network identifies how successive excerpts display increasing amounts of energy throughout this formal function to lead to mm. 129-133. The above analysis of the development section from the first movement of Rautavaara's First Symphony aligns with Burton's identification of the importance of thematic development and Sibelian organicism in the same symphony and supports his assertion that "thematic, logical development should have been a prominent part of Symphony No. 1 seems likely."⁷⁴ Burton approaches Rautavaara's First Symphony from a historical perspective—specifically, that Sibelius recommended him as the recipient of a scholarship to study in the United States, where Rautavaara worked on the original version of this piece. My analysis presented above, then, also attests to Rautavaara's work with Sessions and his influence on form and structure.

Conclusion

Scholars do not place Rautavaara's First Symphony as one of his more prestigious works—a place that is usually reserved for his Third Symphony⁷⁵—but I would like to suggest that this piece has more significance than might appear at first glance. Most first impressions were based on its original version—a version with which Rautavaara himself found issue.⁷⁶ Its extensive 1988 revisions would seem to suggest that a reassessment of its status is in order. This chapter established how the revised first movement of Rautavaara's First Symphony follows a sonata-form structure, despite its origins as two separate movements. In this light—both the lack of critical reception of the revision, and its

⁷³ Damien Blättler, "Radically Inconspicuous Absence: Truncated Sonata Forms in Interwar Paris," *Music Theory Spectrum* 46, no. 1 (Spring, 2024): 112; 112-123.

⁷⁴ Burton, "Upholding a Modernist Mentality," 121-122.

⁷⁵ See Aho, *Einojuhani Rautavaara*, 79; Koponen, "A Study of the Symphony," 58.

⁷⁶ Aho, Einojuhani Rautavaara, 77.

overarching sonata-form structure—are vital to this dissertation's overall goal of illuminating sonata form's continued rethinking and updating throughout the twentieth century. A comprehensive reception for Rautavaara's First Symphony would acknowledge its evolution through time, but focus on the organicism and "thematic, logical development" that I and others appreciate (particularly in the first movement).⁷⁷

This chapter argued that development sections remain operational in late-twentiethcentury sonata-form repertoire. Specifically, I argued that that analysis of secondary parameters identifies various developmental techniques, such as sequencing, layering, fragmentation, and repetition, through its examination of the first movement's development. While these processes are, by nature, thematic, each segment has its own unique and defining profile of secondary parameters, which the secondary-parameter network extracts. The relationships between various entrances reveal which developmental processes are at play in a given moment. Thus, the secondary-parameter network can describe developments, as well interthematic formal functions in expositions and recapitulations and codas.

In the specific case of the first movement of Rautavaara's First Symphony, the preceding analysis examined how secondary parameters create a trajectory from the development's quiet opening to the movement's climax. When paired with this analysis, Rautavaara's statement about his dislike of developments as "variation mechanism[s]"⁷⁸ supports my suggestion to cultivate a fresh perspective on his First Symphony's status within his compositional output. At the very least, Rautavaara's development shows that composers could devise new compositional strategies and rethink the internal workings of a given formal function—even if Rautavaara did not consciously choose to construct his development in this way. New perspectives of the development would seem to be relevant and timely with sonata

⁷⁷ Burton, "Upholding a Modernist Mentality," 121.

⁷⁸ Aho, *Einojuhani Rautavaara*, 86.

form's updates throughout the twentieth century, and I hope to have shown that the analysis of secondary parameters can account for any developmental choices a composer may (or may not) make).

Chapter 6: Secondary Parameters, the Medial Caesura, and the Introduction in Rouse's Second Symphony

While previous chapters have examined expositions, developments, and recapitulations of sonata-form movements, this final analytical chapter revisits the exposition to address monothematicism. I argue that monothematicism in the late twentieth century is defined by the consistency of secondary parameters between the P and S zones—that is, the same set of secondary parameters occurs in the P zone and, to some extent, the S zone. In other words, even though the secondary-parameter network avoids strict analysis of melodies, this approach can identify secondary-parameter consistencies between multiple interthematic formal functions.

Following Samantha Inman's approach, this chapter develops a theory for how monothematic expositions can occur in sonata-form movements.¹ Then, it examines the first movement of Christopher Rouse's Second Symphony (1994) through that lens. Rouse's initial ideas for this symphony came as early as 1984 (contemporaneously with his First Symphony), but Rouse did not write it down until the Houston Symphony commissioned the work in 1994.² Rouse's compositional process of "sketch[ing] mentally, but not on paper" allows for its lengthy gestation period.³ Though some of Rouse's music has been considered as a bit Hollywood-esque, such perspective does not disqualify the presence of a sonata-form

¹ Samantha Inman, "The Inner and Outer Form of Haydn's Monothematic Sonatas," *Theory and Practice* 41 (2016): 1-46.

² Christopher Rouse, composer's note to *Symphony No. 2* (New York: Hendon Music, 1994).

³ Christopher Rouse, "Christopher Rouse," interview by Robert Raines, *Composition in the Digital World: Conversations with 21st-Century American Composers* (Oxford: Oxford University Press, 2015), 34. As a result of his mental composition process, Rouse's inner ear is vital to his musical approach (34), which also contributes to his opinions on the composer's role ("even composers who do plan an instrument still have to be able to hear the whole piece in their head" (34)), music engraving technology (it "does make it easier to not to train your ear" (36)), and education ("the overall education level is not as good now as it was" (37) and today's students have a "disturbing lack of intellectual curiosity" (37)).

structure, nor does his early (but receded) interest in rock music.⁴ Even though the Second Symphony has personal significance for Rouse,⁵ its first movement follows a sonata-form structure that will be described in detail below.

This chapter also argues that the extent to which and locations of changes to secondary parameters can distinguish between thematic and in-tempo introductions. It employs the opening of the first movement of Rouse's Second Symphony to revisit the relationship and distinction between an introduction and P zone. Unlike the thematic introduction that occurred at the beginning of Rautavaara's Third Symphony (discussed in detail in Chapter 2), I argue that the first movement of Rouse's Second Symphony begins with a structural introduction because most secondary parameters change when the P zone begins.

Monothematic Sonata: Theory

Caplin and Hepokoski and Darcy, of course, both provide definitions of monothematicism. Caplin defines the monothematic exposition as one that uses "the same basic idea for both the main theme and the subordinate theme"; the difference between iterations is the key in which each occurs.⁶ The monothematic exposition presents problems of repetition in the recapitulation because the same basic idea would occur in two keys. The solution is to remove the second (redundant) basic idea, but this presents a second problem because a theme cannot "logically" start in the middle.⁷ Composers who choose to write

⁴ James Koehne, "The Flight form Banality," in *Bad Music: The Music We Love to Hate*, ed. By Christopher Washburne and Maiken Derno (New York: Routledge, 2004), 154; Laurie Shulman, "Christopher Rouse: An Overview," *Tempo* New Series, no. 199 (January 1997): 2.

⁵ Rouse, composer's note to *Symphony No. 2*; Rouse, "Christopher Rouse," 33.

⁶ William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998), 169.

⁷ Caplin, *Classical Form*, 169.

monothematic expositions (primarily Haydn, and, less frequently, Mozart) must "alter the theme substantially or eliminate it altogether."⁸ Under formal functions, monothematicism does not present any problems in an exposition, but issues of repetition arise in a recapitulation.

Hepokoski and Darcy mention monothematic sonata-form movements with respect to Haydn.⁹ They believe that, in most cases, the application of the term "monothematic" is a "misnomer" because Haydn usually presents new materials in the C zone.¹⁰ Only "from time to time" does a movement appear to be "emphatically monothematic" (Hepokoski and Darcy, 2006, 136). Thus, they do not seem to believe in monothematicism. Instead, they prefer to describe Inman's incipit category as employing a "P-based S," in which the S zone opens with P materials but these (usually) do not play a structural role in S.¹¹ The difference between P and S, in this case, is that S continues on with different (non-P) materials to achieve the EEC.

Samantha Inman offers a classification of four categories to better define the idea of monothematicism based on degrees of similarity between P and S.¹² The first category, "Equivalence," "delineates the extreme circumstance in which S = P, notwithstanding a change of key, meaning that the two themes by definition have the same voice leading."¹³ Two themes demonstrate the second category, "Incipit," when "S begins by quoting only the

⁸ Caplin, *Classical Form*, 169.

⁹ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006), 36, 136.

¹⁰ Hepokoski and Darcy, *Elements of Sonata Theory*, 136.

¹¹ Hepokoski and Darcy, *Elements of Sonata Theory*, 136, 140.

¹² Inman, "The Inner and Outer Form."

¹³ Inman, "The Inner and Outer Form": 4.

very beginning of P.^{*14} Category 3 requires thematic pairs to "share only a Tonal Melody that may or may not even be in the same part.^{*15} Finally, themes that fulfill Category 4's (Rhythmic Motive) requirements present only similar rhythms and "possibly contour.^{*16} Though Inman is ultimately interested in how each monothematic type handles Schenkerian voice-leading and recapitulatory repetition, her categories can be adapted for twentiethcentury repertoire via secondary parameters. Adjustments are necessary because latetwentieth-century repertoire often eschews Schenkerian voice leading, and because the secondary-parameter network prioritizes non-melodic materials. The following discussion develops three main categories of possible monothematic correspondences: Equivalence, Incipit, and Obscure. In conjunction with the obligatory analysis with the secondaryparameter network, the next section of this chapter applies this approach to the first movement of Rouse's Second Symphony.

Equivalence occurs when all (or most) secondary parameters are consistent between both P and S zones, so that the secondary-parameter network's findings will be consistent for both formal functions. Inman admits that this is an "extreme" case, and this would also be true for an Equivalence relationship in late-twentieth-century repertoire.¹⁷ Even if some secondary parameters were to change, a movement would still fall into the Equivalence category if relationships between secondary parameters remain consistent—for example, a composer might choose to proportionally adjust all rhythms through diminution or augmentation; a new group of instruments might portray the same materials in the same texture; or the overall dynamic level might be different while fluctuations remain consistent.

¹⁴ Inman, "The Inner and Outer Form": 4.

¹⁵ Inman, "The Inner and Outer Form": 7.

¹⁶ Inman, "The Inner and Outer Form": 8.

¹⁷ Inman, "The Inner and Outer Form": 4.

An Incipit relationship might occur when the S zone begins with P's secondary parameters, but then turns to develop the S zone's unique network. An example of this would occur if, for example, P had long rhythmic values, quiet dynamics, and woodwind instrumentation, and S began with the secondary parameters but increased rhythmic speed, louder dynamics, or increased instrumentation. There are a range of levels in which an S zone might engage P's materials before shifting. On the one hand, the S zone might gradually adjust or integrate only a few secondary parameters after relying on those of the P zone for a prolonged period of time; on the other hand, it is also possible for the S zone to switch all secondary parameters shortly after its beginning. It would seem more likely that few secondary parameters change, rather than many, and that changes would take place gradually, as a sudden shift would suggest the presence of a moment of closure and the beginning of a new formal section. However, composers can create a plethora of musical situations, so it does not seem prudent to eschew the possibility for sudden secondary-parameter changes to take place within the S zone. No matter the number of secondary parameters that change and when or how they do, the important fact is that shifts occur. Even if all secondary parameters in a given movement have changed by the arrival of the EEC, the fact remains that the S zone began with P's secondary parameters, which means that the movement in question belongs to the Incipit category. The alteration of secondary parameters is thus a vital and unique characteristic of movements that belong to the Incipit category.

Finally, an Obscure relationship occurs when few or only one secondary parameter is consistent between the P and S zones. This category corresponds to Inman's Category 4 (Rhythmic Motive), of which she says that this category only loosely fits the definition of "monothematic" so that it "stretches the boundaries of what most scholars even classify as monothematic."¹⁸ While consistency of rhythms is certainly a viable option for late-

¹⁸ Inman, "The Inner and Outer Form": 8, ftnt. 7.

twentieth-century composers, the secondary-parameter network treats all secondary parameters with equal weight so that any combination of a few select secondary parameter has the potential to define an Obscure relationship. In other words, if any one, two, or three secondary parameters, such as instrumentation, tempo, texture, time signature, or dynamics, are sufficiently consistent between two formal functions, the movement in question is a candidate for the Obscure category. This is because so many secondary parameters change at formal boundaries in late-twentieth-century sonata-form repertoire.

In a musical language where composers habitually adjust all secondary parameters, the consistency of a few would seem to be suggestive of an Obscure relationship. In other words, composers' frequent adjustments of secondary parameters necessitate such analytical flexibility. This said, it is difficult to make generalizations about this category without at least one concrete example, for which the score study for this project has produced none. Furthermore, the categories defined above apply only to late-twentieth-century repertoire, where certain parameters (such as tempo and time signature) frequently change; applying the secondary-parameter network to earlier repertoires will require adjusting the relevant criteria and will be considered in Chapter 7. Given the extent to which composers adjust secondary parameters at formal boundaries, regardless of how many themes they write, it would seem that Obscure relationships are fairly uncommon. It is difficult to theorize how composers might create Obscure relationships without many examples of monothematic sonata forms from the late twentieth century, and the fact that I only found one such movement suggests that composers tended to avoid this substructure, whether consciously or not, and for whatever reason.

Table 1 summarizes the above discussion by showing a summary of the adjustments to Inman's categories for the repertoire studied in this dissertation. The descriptions and tonal

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implications in Inman's column are her own and were extracted from her Example 3.¹⁹ This system of categorization helps show the extent to which composers might employ or exploit similarity or difference of multiple iterations of thematic material via secondary parameters. Having created a taxonomy of three different types of monothematic expositions for sonata-form movements in late-twentieth-century repertoire, I will now turn to analysis of the first movement of Rouse's Second Symphony.

Category	Inman: Haydn	Secondary-Parameter Network: Late-Twentieth Century
	Description Tonal Implication	Description
1: Equivalence	S is basically a transposition of P, possibly including surface embellishment.	Most (or all) secondary parameters are consistent between P and S.
	P and S have identical voice leading.	
2: Incipit	S begins with a short quote from the beginning of P, but continues with developmental or new material.	S begins with P's secondary parameters, but adjusts or integrates them into S's own network.
	P and S usually have the same local head tone. The rest of S may or may not resemble P.	
3: Tonal Melody	S retains part of a melodic line from P on the same scale degrees.	X
	P and S may or may not have the same local head tone.	
4: Rhythmic Motive/Obscure	S retains part of a motive from P, but alters the scale degrees.	Few or one secondary parameter is consistent between P and S.
	P and S do not necessarily share any voice leading features.	

Table 1. A summary of Inman's four categories and their late-twentieth-century counterparts.

¹⁹ Inman, "The Inner and Outer Form": 4.

Monothematic Sonata: Analysis

The following discussion applies the secondary-parameter network to the first movement of Rouse's Second Symphony to analyze its P and S zones. I demonstrate how this movement adheres to the Incipit category because S begins with P's secondary parameters but then veers off to develop its own network. Then, I briefly turn to the transition and examine its conclusion, which presents a medial caesura. Throughout this discussion, I invoke secondary parameters as criteria to define each formal function, as in previous chapters; each congregation of secondary parameters coalesces to articulate the segmentation that defines each interthematic formal function.

Table 2 presents the secondary-parameter network analysis of the first movement of Rouse's Second Symphony and reveals several similarities between the beginnings of the P and S zones. Example 1a shows how woodwind and strings instrumentation, a 3/4 time signature, eight and dotted quarter note rhythms, a homophonic texture, and *mezzo forte* dynamic level define the P zone. Melodic materials alternate between the first and second clarinets, and the right-angle brackets denote each switch. Example 1b portrays similar secondary parameters at the beginning of the S zone: the opening instrumentation (clarinet and strings), rhythms (eighth and dotted-quarter notes), texture (homophonic), and dynamic level (*mezzo forte*) return at m. 71. Example 1b remains at the same tempo as Example 1a, but the time signature changes to 2/4. Thus, a significant number of secondary parameters are consistent between the P and S zones. Because the beginnings of the P and S zones both retain five secondary parameters, their relationship is a strong candidate for the Equivalence or Incipit categories; they share too many categories to belong to the Obscure category.

	Secondary Parameters
Introduction: mm. 1-8	Intro: mm. 1-8
	-instrumentation: winds, strings
	-tempo: allegro, half note = 100
	-time signature: 2/4
	-rhythms: eighth notes

	-texture: unisons/monophonic -dynamic: <i>mezzo forte</i> , decrescendos to <i>piano</i>
Exposition P: mm. 9-33	P: mm. 9-33 -instrumentation: clarinets, then oboe; low strings -tempo: same -time signature: 3/4 -rhythms: eighth notes, dotted quarter notes -texture: homophonic -dynamic: <i>mezzo forte</i>
TR: mm. 34-67	 -energy-gain: features new instruments; contrapuntal texture -instrumentation: strings; winds' interjections -tempo: same -time signature: 3/4; changes to 2/4, m. 64 -rhythms: eighth notes, dotted quarter notes; eight notes and long notes in winds -texture: contrapuntal -dynamic: <i>pianissimo</i>, occasional swells to <i>mezzo forte</i> (mm. 56, 66) -MC: m. 67 (stepwise motion; rests; dissonant harmony resolves to consonant harmony; longer rhythms and louder dynamics emphasize dissonance) longer rhythms—tied half notes) -MC-fill, mm. 67-70: cello (eighth notes) and bass (quarter notes); <i>mezzo forte</i>; continues to be accompaniment for P's repetition
S: mm. 72-175	P's repetition (same theme, but with displaced octaves): mm. 72-87 -instrumentation: solo clarinet (P's theme) and bass clarinet; low strings' (cello and bass) accompaniment -tempo: same -time signature: 2/4 -rhythms: eighth notes, dotted quarter notes -texture: polyphonic (clarinet/bass clarinet duet + string accompaniment; string accompaniment consistent throughout all of S) -dynamic: <i>mezzo forte</i> -jagged contours from large leaps -New Materials (I): mm. 88-101: -instrumentation: reed winds, horn; low strings continue -tempo: same -time signature: same -time signature: same -rhythms: eighth notes, quarter notes, sustained notes in winds -texture: contrapuntal (staggered entrances) -dynamic: <i>mezzo forte</i>

	-closure: m. 101 (contrary stepwise motion in motive; sustained notes; decrescendo; involved instruments rest after closure occurs)
	New material (II): pickup to m. 102-m. 175 -instrumentation: piccolo/flute duet (pickup to m. 102-m. 125); oboe/English horn duet (pickup to m. 134-153); mm. 88-95 motive occurs after each duet -tempo: same -time signature: 2/4 -rhythms: eight notes; syncopated quarter notes -texture: contrapuntal (duet + upper strings + low strings' accompaniment pattern continues) -dynamic: <i>mezzo forte</i> -EEC: m. 175 (change instrumentation, dynamics) -Closing zone: mm. 175-181 (bassoon, eighth notes and quarter-note syncopations)
Development: mm. 182-392	-m. 182: string quartet; audible fragmentation (mm. 182- 188 is a sentence)
	-m. 197: change to contrapuntal texture; add bass to make string quintet
	-mm. 221-222: faster alternation between instrument
	groups (strings and tympani); fragmentation
	bassoons and strings, m. 238
	-mm. 257-271: fragmentation to 3 beats and overlapping
	-mm. 294-301: trumpets (new instrument)
	-mm. 303-321: feature brass
	-mm. 221-326: fast alteration between instrument groups
	-pickup to m. 330-m. 357: flute/clarinet/bass clarinet solo
	in octaves (new instrument combination); tympani
	accompaniment (new instrument)
	winds, strings and trombones, and full orchestra (new
	instrumentation) mm 376 388: fragmentation (2 to 1 m units) and faster
	alternation between instrument groups
	-RT: mm. 388-392 (clarinet's long note, G#-A)
Recapitulation: mm. 393-530	P: mm. 393-418 (fugue)
	-instrumentation: viola, bassoon accompaniment; add
	-tempo: same
	-time signature: 3/4
	-rhythms: eighth notes, dotted quarter notes
	theme (mm. 402 and 409) to create contrapuntal texture

-dynamic: <i>piano</i>
TR: mm. 419-472 -energy-gain: solo instruments, gradually quicker
culmination
-instrumentation: solo winds with sparse string
accompaniment; builds up to most of orchestra, mm. 461-468
-tempo: same
-time signature: changes between 2/4 and 3/4
-rhythms: eighth notes; many measures of sustained half notes
-texture: homophonic
-dynamic: mezzo piano, mezzo forte; crescendos to forte at
m. 461
-MC: m. 4/2 (after long notes)
MC-IIII: tympani, m. 472
S: P's repetition: mm. 473-488 (bassoon; clarinets'
accompaniment; violin countermelody)
New Material (II): mm. 489-505
-instrumentation: winds; viola and cello accompaniment
-tempo: same
-time signature: 2/4
-rhythms: eighth notes and quarter notes; trills
-texture: contrapuntal
-EFC: m 505 (change in dynamic instrumentation)
-Closing zone or coda: mm 506-530 (fragmentation fast
alternation between instruments, quieter dynamics eighth
notes and long notes; bassoon syncopations)

 Table 2. The secondary-parameter network for the first movement of Rouse's Second Symphony.



Example 1a. Christopher Rouse, Symphony No. 2, I, mm. 9-14: The beginning of P is marked by instrumentation (clarinets and low strings), time signature, use of eighth notes and dotted quarter notes, and a homophonic texture. The right-angle brackets show the melodic material's changes between first and second clarinet.

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Example 1b. Christopher Rouse, Symphony No. 2, I, mm. 71-80: New secondary parameters suggest that a new section begins at m. 65. Some notes in the cello and bass lines are displaced an octave for ease of readability. © Copyright 1994 by Hendon Music

Reproduced by permission of Hendon Music, a Boosey & Hawkes company. Solely for the use by Anne Delfin Example 2 presents the clarinet line's closure, which occurs in m. 88, and the ensuing materials. Closure occurs through stepwise motion, in both clarinet and bass clarinet lines, and the following rests (with corresponding change of instrumentation) substantiate this closure. The immediate change of instrumentation to horns, the staggered addition of both oboe/clarinet and English horn/bass clarinet pairs, and the entrances' accumulation to a more layered contrapuntal texture than previously seen reveals new secondary parameters. Even though time signature, tempo, and dynamic level remain consistent, the fact that three secondary parameters change at m. 88 locates the first movement of Rouse's Second Symphony within the Incipit category. While a moment of closure does occur here, Example 2 also shows that the cello's and bass's accompaniment pattern continues; this fact indicates that the S zone has not yet concluded.



Example 2. Christopher Rouse, Symphony No. 2, I, mm. 85-91: New secondary parameters begin in m. 88, after a moment of closure, to cement this movement's belonging to the Incipit category of monothematic exposition types. The clarinet and bass clarinet lines are placed into a single octave for ease of readability, as are some notes in the cello and bass lines. Rests appear only in measures when old voices conclude or new voices begin. © Copyright 1994 by Hendon Music

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Example 3 shows an excerpt that occurs shortly after Example 2, when secondary parameters again change. The instrumentation changes to focus on a duet between the piccolo and flute, which results in a change of texture to a more contrapuntal setting. While the duet still relies on eighth-note rhythms, the piccolo presents a new rhythmic profile because it incorporates the use of syncopations, such as in mm. 102 and 104. The Incipit model only

requires one substantial change of secondary parameters, but the presence of a second shift of secondary parameters does not negate an exposition's belonging to this category.



Example 3. Christopher Rouse, Symphony No. 2, I, mm. 99-105: Instrumentation and texture change substantially, and rhythms expand to include syncopation, to create a third change of secondary parameters within the S zone.

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Incidentally, Example 3 also shows how the materials immediately prior to the change in secondary parameters also present a moment of closure. Oboe, English horn, clarinet, and bass clarinet sustain a dissonant sonority that consists of F, Gb, Gb, Gb, Gb, Gb, Gb, Gb, Step) to a consonant minor sixth (A and F). A *decrescendo* occurs throughout the dissonant chord, so that the chord of resolution has a quieter dynamic (*pianississimo*) than its predecessor, even though the dissonant chord begins at a *piano* dynamic level. The instruments involved with this moment of closure exit the texture after the end of the resolution chord, which helps facilitate the change of instrumentation just discussed.

Even though the incipits of the P and S zones rely on a number of consistent secondary parameters, both respectively demonstrate tight- and loose-knit features that are representative of their respective formal functions. For one example, thematic statements in the P zone tend towards regular lengths (eight measures, or eight measures with an extra downbeat) while those in the S zone tend towards greater length. The clarinet melody's appearance in the S zone encompasses seven measures, and the piccolo/flute duet spans twenty-four measures (neither count includes pickup notes).

Furthermore, the P zone's melodic materials present more efficient formal functions than S and, with that, demonstrate an increased use of unified melodic material. Example 4 reproduces Example 1a to show its sentential structure: its one-measure basic idea and its immediate repetition are annotated by brackets in this example. Its continuation relies on the rhythmic figure of a dotted quarter note and eighth note, which incites fragmentation in mm. 12-13; Example 4 identifies fragmentation with circles. The continuation uses a faster harmonic rhythm that changes, on average, every two beats instead of every measure. Liquidation occurs via the fourth-species counterpoint in mm. 15-16 (marked with the gently squiggly line) and brings about the P zone's first moment of closure in m. 17 (indicated with an arrow).



Example 4. Christopher Rouse, Symphony No. 2, I, mm. 9-14: A reproduction of Example 1a. The P zone presents a sentence that includes a basic idea and its repetition, fragmentation, liquidation, and a moment of closure.

© Copyright 1994 by Hendon Music Reproduced by permission of Hendon Music, a Boosey & Hawkes company. Solely for the use by Anne Delfin A comparison of the S zone's treatment of this same melody is illuminating. In contrast with P's tight-knit sentence, the S zone presents a significantly looser version. Example 5 includes annotations to indicate these phrasal adjustments. Its iteration includes new motives, such as the dotted quarter note with two eighth notes in mm. 75-77 (the previous iteration of this motive omitted the second eighth note). This motive is incorporated into the melody a second time, in mm. 78-79, before the mm. 77-79 materials repeat with rhythmic expansion: the ascending eighth-note run includes two more eighth notes, and the new motive's dotted quarter note is also a beat longer in length. The D on the down beat of m. 84 and its two eighth-note pickup is repeated in mm. 84-85, though it is transposed up a whole step. Additional repetition occurs in mm. 85-86, when the E-Eb-G is transposed down a perfect fourth to sound at B-Bb-D. Such repetitions—whether literal or transposed, and with or without rhythmic expansion—help elongate this phrase to its unusual length of seventeen measures; the change of time signature to one with fewer quarter notes per measure also assists with this melody's lengthening process.



Example 5. Christopher Rouse: Symphony No. 2, I, mm. 71-88: The S zone's iteration of the P-zone materials includes a number loose-knit changes, such as new motives, and internal repetitions and rhythmic expansions that result in longer length.

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Not all loose features reside in the clarinet line. Example 1b shows how the bass line maintains a regular harmonic rhythm of quarter notes throughout this excerpt, which is at

odds with the clarinet theme as its sentential structure moves towards the continuation and cadential functions. Additionally, S zone's adjustment of time signature and the clarinet's use of disjunct motion (minor ninths and major sevenths rather than semitone motion) immediately distort the original version. The leaps of ninths and octaves diversify the melodic material and create a general sense of instability that is requisite for loose-knit organization. Thus, the S zone's iteration of the P materials includes many of the hallmarks of a loose organization, including longer length that results from diversity of melodic material, phrase expansions, and ambiguous formal function.

While two moments of closure exist within the S zone in mm. 88 and 101, these moments help facilitate changes of secondary parameters that are vital to the S zone's classification as a member of the Incipit category of monothematic exposition types. The tight- and loose-knit qualities of the P and S zones, respectively, assist in making the distinction between their roles in the exposition of the first movement of Rouse's Second Symphony, as is the transition. Having explored the P and S zones in detail, I will now turn to the transition to consider the presence of the medial caesura.

Example 6 presents an excerpt from the beginning of the transition (TR). It shows that instrumentation changes to focus on strings, and that the texture shifts from homophonic to contrapuntal. Additionally, the dynamic levels change from fluctuating between *mezzo-forte* and *piano* to *pianissimo*. These three adjustments are the primary identifying secondary parameters for the transition. Energy-gain occurs through the denser contrapuntal texture.



Example 6. Christopher Rouse, Symphony No. 2, I, mm. 34-38: The beginning of the transition includes a change of instrumentation and texture, and a return back to a 3/4 time signature. © Copyright 1994 by Hendon Music Reproduced by permission of Hendon Music, a Boosey & Hawkes company. Solely for the use by Anne Delfin

Example 7 shows that a medial caesura (MC) concludes the TR in m. 67. In short, mm. 66-67 demonstrate a number of qualities that are consistently present in moments of closure. Stepwise motion occurs both in woodwind lines (particularly between the resolutions of C4, C \sharp , and E to D in piccolo, flute, oboe, clarinet, bass clarinet, and bassoon lines). Stepwise contrary motion occurs in all string lines, which the first violins and basses represent in Example 7. The woodwinds sustain a dissonant sonority in mm. 65-66, though this chord begins to be built through aggregation as early as m. 61 (not shown). The woodwinds' dynamic markings are also significant: the *crescendo* emphasizes the dissonance in m. 66, and the *decrescendo* allows the sonority to relax into its resolution. In other words, the dynamics help bring out the dissonance, as often occurs in diatonic and functionally tonal settings. Furthermore, the change of instrumentation that occurs at m. 67—primarily that the low strings establish their accompanimental pattern—allows the woodwinds to rest for several measures; such space is common after a moment of closure. Thus, mm. 66-67 include numerous qualities that identify it as a moment of closure, and its location at the end of the TR marks this moment as the MC.



Example 7. Christopher Rouse, Symphony No. 2, I, mm. 65-67: A medial caesura concludes the TR. © Copyright 1994 by Hendon Music Reproduced by permission of Hendon Music, a Boosey & Hawkes company. Solely for the use by Anne Delfin

The sonata-form reading of the first movement of Rouse's Second Symphony presented above seems to reflect his attitude towards tradition. While he states that he has no interest in writing in the romantic style, Rouse believes he can learn a lot from historical styles and that he can take what he learns for his own compositional practice.²⁰ This is an interesting view, given the monothematic analysis that resulted from the secondary-parameter network's reading of this movement. Rouse has not specifically commented on the form of this movement but, from his interest in historicity, its sonata-form-ness does not seem like a stretch. All other movements studied in this dissertation demonstrated substantial differences of secondary parameters between the P and S zones; the fact that only one movement embodied monothematicism suggests that, like in earlier eras, a monothematic relationship between P and S zones was not the presumed setting. Did Rouse intend to make a historical comment on monothematicism?²¹ We may never know, but the analysis presented above is thus significant in that it captures another (historical) facet of sonata form and how it could be updated in the twentieth century.

²⁰ Christopher Rouse, "Going to Eleven," interview by Frank J. Oteri, *New Music USA*, February 8, 2008, <u>https://newmusicusa.org/nmbx/christopher-rouse-going-to-eleven/</u>.

²¹ David Metzer presents something of a parallel argument in his analysis of Rouse's borrowing of "Es ist genug" in his work *Iscariot* (1989) to argue for Rouse's "ambivalence" towards modernism within a network of composition that quote "Es ist genug" (David Metzer, "Repeated Borrowing: The Case of "Es ist genug," *Journal of the American Musicological Society* 71, no. 3 (Fall 2018): 740.)

Introduction and P

Having holistically explored the exposition of the first movement of Rouse's Second Symphony through the lens of monothematicism, I will now consider what occurs before all of the excerpts discussed above: mm. 1-8 provide an introduction to the movement. How does the secondary-parameter network identify this as such? Chapter 1 summarizes any introductory formal function as being more likely to have a less complex contrapuntal texture, repetitive rhythms, consistent instrumentation, and slower harmonic rhythms. I revisit the first example in Chapter 2 so that the secondary-parameter network can interrogate what it previously identified an introduction to the P theme (a prefix, so to speak) in the first movement of Einojuhani Rautavaara's Third Symphony. Incorporating this example also allows this analysis to draw out differences between the openings of Rautavaara's and Rouse's movements. As will be discussed below, both examples of introductions demonstrate all requisite introductory qualities; the essential difference is that no secondary parameters change in the example from Rautavaara's Third Symphony, but many do in the example from Rouse's Second Symphony. I will argue that these two examples present a thematic introduction and an introduction to the whole movement, respectively.

In its discussion of Einojuhani Rautavaara's Third Symphony, Chapter 2 presented an example of a thematic introduction, which also followed secondary-parameter guidelines for introductory formal functions. Example 8 reproduces Chapter 2's Example 1. To briefly summarize: the opening of the first movement of Rautavaara's Third Symphony includes a thinner texture by focusing on accompanimental materials, which provide consistent rhythmic values and instrumentation; furthermore, a regular harmonic rhythm occurs. In this example, all secondary parameters remained consistent between the introduction and P theme; Example 8 identifies this moment with a vertical black line. While the formal function

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shifts, no analogous adjustment occurs in the secondary parameters. Because Rautavaara simply adds the P theme to the existing network of secondary parameters, the preceding introduction is a thematic introduction—one that, in Caplin's words, "resides on a hierarchical level comparable to that of a basic idea, contrasting idea, cadential idea, and codetta."²² In this case, the only clue that the formal function shifts from before-the-beginning to a thematic function is the presence of the horn's melody. Because no secondary parameters change, mm. 1-5 rest on the same hierarchal level as mm. 6-10; in other words, the secondary-parameter consistency reveals that there have been no changes at a structural level.



Example 8. Einojuhani Rautavaara, Symphony No. 3, I, mm. 1-10: A reproduction of Example 1, Chapter 2. (The introduction to the P theme, and P, are based on instrumentation and homophonic accompaniment.) © Copyright 1994 by Hendon Music Reproduced by permission of Hendon Music, a Boosey & Hawkes company. Solely for the use by Anne Delfin

²² Caplin, *Classical Form*, 203.

Example 9 excerpts a few representative lines from the opening of the first movement of Rouse's Second Symphony. In this excerpt, all woodwind instruments play eighth notes against the strings' quarter notes; the relationship between the piccolo and first violins represents this consistent relationship. Additionally, there are no changes of instrumentation throughout this short introduction. Together, the winds and strings double all pitches, and all twelve notes of the chromatic scale consistently sound.



Example 9. Christopher Rouse, Symphony No. 2, I, mm. 1-8: Wind and string instrumentation, quick tempo, 2/4 time signature, eighth- and quarter note rhythms, unison texture, and *mezzo forte* dynamic (with *decrescendo* to *piano*) define this movement's opening.

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The first four chords present a series of augmented triads, for which the four chordal roots of each vertical set relate by semitone. The first beat, for example, has augmented triads built on F, Ab, G, and Gb, with the result is that all twelve notes of the chromatic scale sound on this, and all subsequent, augmented triads. At m. 3, the sonorities change, so that two diminished triads, one major triad, and one minor triad sound together. Although Rouse changes the chords' qualities, they still present all twelve chromatic notes. All pitch materials are consistent even though the harmonies change. In m. 4, all instruments maintain pitch material. Thus, there are two changes of harmonic rhythm in this excerpt, which is slower than that of the subsequent P zone.

Table 6 provides an overview of the secondary parameters that change between this excerpt and the P zone (Example 1a, reproduced in Example 10). As with any other findings

of the secondary-parameter network, the aggregate secondary parameters define Example 9. In this case, the wind and string instrumentation, quick tempo, 2/4 time signature, eighth- and quarter note rhythms, unison texture, and *mezzo forte* dynamic (with *decrescendo* to *piano*) constitute this example. At m. 9, time signature, rhythms, texture, and, to a lesser extent, instrumentation shift. Even if the switch from "winds and strings" to "clarinets and strings" does not seem adequate to define a change of instrumentation, several other secondary parameters also change at m. 9 to differentiate it from the preceding measures.

Intro: mm. 1-8	P: mm. 9-33
-instrumentation: winds, strings	-instrumentation: clarinets, then oboe; low
-tempo: allegro, half note $= 100$	strings
-time signature: 2/4	-tempo: same
-rhythms: eighth notes	-time signature: 3/4
-texture: unisons	-rhythms: eighth notes, dotted quarter notes
-dynamic: mezzo forte, decrescendos to	-texture: homophonic
piano	-dynamic: mezzo forte
	-character: agile

Table 6. The secondary-parameter network's differentiation between the introduction and P in the first movement of Christopher Rouse's Symphony No. 2.



Example 10 (reproduction of Example 1a). Christopher Rouse, Symphony No. 2, I, mm. 9-14: The beginning of P is marked by instrumentation (clarinets and low strings), time signature, use of eighth notes and dotted quarter notes, and a homophonic texture.

© Copyright 1994 by Hendon Music Reproduced by permission of Hendon Music, a Boosey & Hawkes company. Solely for the use by Anne Delfin The change of numerous secondary parameters that occurs across mm. 8-9 allows Rouse to present a more structural introduction by beginning a new formal function at m. 9. If the premise of the secondary-parameter network's analytical viability originates in the fact that significant numbers of secondary parameters change at structural formal junctions, then its scope includes the seam between the introduction and P zone. Instead of secondaryparameter consistency that marks a thematic introduction, the first movement of Rouse's Second Symphony presents an "in-tempo introduction" because so many secondary parameters change. This type of introduction follows Caplin's "slow introduction" and is more structurally independent than is a thematic introduction, as both "reside[] on a level comparable to that of an exposition, development, recapitulation, and coda"²³: enough secondary parameters change to mark m. 9 as the beginning of a new section. In the lexicon of Sonata Theory, one might alternatively label this as a P⁰ module because it "displays an overt preparatory function."²⁴

The above discussion focuses on Caplin's classifications of introductions, but Hepokoski and Darcy also discuss several types of introductions.²⁵ While the secondary parameters suggest one set of interpretations based on Caplin's definitions, Hepokoski and Darcy's taxonomy almost suggests an opposite interpretation. Whereas the consistency of secondary parameters suggested that the opening of the first movement of Rautavaara's Third Symphony was a thematic introduction, its slow tempo, ethereal tremolos, and sparse birdcalls would seem to fit the "Setting of a Tone of High Seriousness or Contemplative Absorption" category of the slow introduction.²⁶ Similarly, what was analyzed above as

²³ Caplin, *Classical Form*, 203-205.

²⁴ Hepokoski and Darcy, *Elements of Sonata Theory*, 72.

²⁵ Hepokoski and Darcy, *Elements of Sonata Theory*, 292-304.

²⁶ Hepokoski and Darcy, *Elements of Sonata Theory*, 302.

Rouse's in-tempo introduction seems to be more like a "brief, in-tempo introduction" that "serves as an initial spur for the entire movement."²⁷ In other words, both introductions' structural roles seem to be reversed between Caplin's and Hepokoski and Darcy's versions of introductions. The crux of this issue lies with both movements' tempi: While Rautavaara's movement begins at a slower tempo, all of Rouse's movement occurs at the same pace. An introduction to a slow, contemplative movement, when taken at the same tempo, will yield a similar effect; but one with a quick tempo will sound more like an energizing incipit. While a slow tempo was requisite for a structural, before-the-beginning introduction in functionally tonal repertoire, this pair of movements demonstrates that late-twentieth-century sonata forms do not retain this trope.

To summarize the differences between thematic and in-tempo introductions: on the one hand, thematic introductions occur with a theme, in that they carry the same secondary parameters as the theme itself. On the other hand, in-tempo introductions possess their own networks of secondary parameters because they function as introductions to movements as a whole and thus necessitate structural independence from any ensuing themes, which the secondary-parameter network identifies through changes of instrumentation, time signature, texture, etc. In other words, as more secondary parameters change between the introduction and P zone, the more likely it is that the introduction and P zone are separate formal entities. The above examples from the first movements of symphonies by Rautavaara and Rouse demonstrate the two different types of introductions, but it is not unimaginable for composers to play with gradations of secondary-parameter changes to create a continuum between thematic and in-tempo introductions.

²⁷ Hepokoski and Darcy, *Elements of Sonata Theory*, 292.

Conclusion

The preceding chapter presents two important corollaries to analyses taken up in earlier chapters. First, it creates a taxonomy for three types of monothematic expositions of sonata-form movements for late-twentieth-century symphonic repertoire that is based on secondary parameters, and the subsequent analysis via the secondary-parameter network puts this model into action. Thus, this chapter offers an important contribution in its study of sonata form in the late twentieth century through its considerations of a monothematic exposition. Through my argument that secondary parameters can define monothematicism, this chapter's analysis of the first movement of Rouse's Second Symphony demonstrates how secondary parameters can be an integral part of considering all parts—and any type thereof of sonata-form movements.

Second, this chapter argues that secondary parameters can distinguish between an intempo introduction and the P zone. The analyses presented here and in Chapter 2 reveal that secondary parameters differentiate between introductions and P-zone materials on multiple structural levels. The distinction between a thematic and in-tempo introduction is defined by the number of secondary parameters that change from the end of the introduction to the beginning of the P zone. At this junction, many secondary-parameter adjustments occur for an in-tempo introduction, and fewer happen when a thematic introduction is in place. In some respects, the analytical process is similar to determining between an Equivalence or Obscure relationship for a monothematic exposition: both an in-tempo introduction and an Obscure relationship will change most secondary parameters, while a thematic introduction and Equivalence relationship retain most secondary parameters.

Over the course of the past five chapters, this dissertation considered individual applications of the secondary-parameter network in great detail to demonstrate its power to excavate sonata form in late-twentieth-century repertoire. The final chapter, the conclusion,

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takes a step back to consider how this analytical approach can be applied to other repertoires and what implications its broadening has for music study in general.

Chapter 7: Conclusion

The secondary-parameter network shows how musical parameters other than pitch and harmony create structure in all music that has discrete sections. Examining commonpractice repertoire in terms of secondary parameters will create multivalent stories about this repertoire, and will thus allow for the more inclusive study of numerous compositional practices. At present, scholars have tools to examine sonata form in terms of each piece's own historical context; however, because all western classical music includes secondary parameters, the secondary-parameter network offers a perspective that transcends any specific sub-style within this genre so that musicians can directly compare sonata-form movements from multiple centuries. While this type of analysis will be explored in greater detail below, it accounts for something that many musicians might assume: the continued presence of sonata form, via composers' conscious choice or not, created a historical, dialectical relationship with the past as a fallout of composers' un- or intentional invocation of the form. Foregrounding secondary parameters in analysis engages with the critical conversations of both receiving a history (through sonata form conventions), and remaking that inheritance (with the secondary-parameter network)-virtually all of these composers were aware of, grappled with, and commented on their own historicity and/or cultural context in some way.¹ Musicians and listeners have direct access to this dialogue—at minimum,

¹ Liebermann discusses his interest in Beethoven's music and belief of the historical enrichment of a cultural context (Lowell Liebermann, "Composer Lowell Liebermann," by Bruce Duffie, 1998, <u>http://www.bruceduffie.com/liebermann2.html;</u> Lowell Liebermann, "Lowell Liebermann's Personal Demons," interview by Patrick Jovell, *Piano Street Magazine*, April 1, 2021,

https://www.pianostreet.com/blog/articles/lowell-liebermanns-personal-demons-11052/). Denisov's membership as an unofficial Soviet composer locates him in a particular cultural context, which he sought to escape through his second conservatory study (Cairnes, "Edison Denisov's Second Conservatory: Analysis and Implementation," *Indiana Theory Review* 31, no. 1-2 (Spring/Fall 2013): 52-87). Rouse thought about what he could learn from the Romantic style (Christopher Rouse, "Going to Eleven," interview by Frank J. Oteri, *New Music USA*, February 8, 2008, <u>https://newmusicusa.org/nmbx/christopher-rouse-going-to-eleven/).</u> Finally, Yun was concerned about merging his Eastern culture into Western musical styles (Francisco F. Feliciano, "Isang Yun (1917-)," in *Four Asian Contemporary Composers: The Influence of Tradition in Their*

Feliciano, "Isang Yun (1917-)," in Four Asian Contemporary Composers: The Influence of Tradition in Their Works (Quezon City, Philippines: New Day, 1983), 32-66; Taeyeong Jung, "An Exploration of Sigimsae and the Technique of the Korean Instrument Piri Used in Isang Yun's Riul for Clarinet and Piano" (DMA document, University of Nebraska, 2023), 14-25; Yun Jeong Kim, "Isang Yun's Violin Concerto No. 1 (1981): A Fusion of

through a piece's title—and are invited to participate in the historical, critical conversation about the evolution of western culture. With the secondary parameter network as a guide, the analyst connects compositional design and history via the listening experience.

Analyses completed by the secondary-parameter network demonstrate the extent to which recent music relates back to past musical practices: each first movement of a multimovement symphony studied in this dissertation reveals the embodiment of sonata form in late-twentieth-century repertoire. Though each case study focused on individual sections of sonata form (exposition, development, or recapitulation) that best demonstrated the secondary-parameter network's applicability, the form tables demonstrate that this analytical method can be used to assess whole movements. Chapters 2, 3, and 6 discuss expositions, and Chapter 2 also explores recapitulations. Chapters 4 and 5 focus on developments. These case studies reveal that each of these sonata-form parts retains its historical formal function—that is, expositions include three interthematic formal functions, developments develop, and recapitulations restate. The arguments presented in these chapters demonstrate that secondary parameters consistently elucidate sonata form continued presence to the end of the twentieth century.

Each chapter also reveals a less-common formal tendency. Chapters 2 and 3 consider the junctures between formal functions: how exactly do composers move from one to the next? The discussions on the first movements of Liebermann's First Symphony and Rautavaara's Third Symphony show that procedures of closure are still important in latetwentieth-century repertoire, and that they draw on tropes of stepwise motion and harmonic resolution (through motion from discordant to concordant harmonies) from functional tonality; the first movement of Yun's First Symphony shows how composers can retain

Eastern and Western Styles, and the Influence of Taoism" (D.M.A. document, University of Cincinnati, 2012), 15-20; and Andrew McCredie, "Isang Yun (1917-1995)," in *Music of the Twentieth-Century Avant-Garde: A Biocritical Sourcebook*, ed. Larry Sitsky (Westport, CT: Greenwood Press, 2002), 589).

cadences but obfuscate formal junctions through permeable boundaries. Chapters 4 and 6, respectively, explore the implications of Denisov's free micropolyphony and Rouse's monothematic exposition for sonata form. Chapter 5 considers how the first movement of Rautavaara's First Symphony maintains a sonata-form structure, despite its origins in two separate movements.

A future avenue of the secondary-parameter network arises when it is considered through some of Daniel Harrison's ideas²: how can the secondary-parameter network (and its analytical subjects) be historically situated, within the broader frame of music study? The first step to answering this question would be to assess the secondary-parameter network's backwards compatibility. A preliminary analysis of the first movement of Mozart's Flute Quartet in D-major, K. 285, demonstrates that the secondary-parameter network can be applied to repertoire of earlier times, though some refinements will be necessary; I discuss some necessary refinements after this analysis.

The following analysis by and refinement of the secondary-parameter network response to Paul Wingfield's review of *Elements of Sonata Theory*, in which he calls for an "alternative model" for the analysis of sonata form that focuses on "the differing roles of primary and secondary material," places "more equal emphasis must be given to the frontweighted as well as the goal-directed aspects of sonata form," allows "more flexible approach[] that [is] less reliant on the rotational metaphor," and will "be flexible enough to accommodate for the overwhelming predominance…of characteristics that are exceptional in or absent from earlier sonata movements."³ In part because the secondary-parameter network's analyses incorporate ideas from Caplin's formal functions, it also fulfills a number

² Daniel Harrison, *Pieces of Tradition: An Analysis of Contemporary Tonal Music* (Oxford: Oxford University Press, 2016).

³ Paul Wingfield, "Beyond 'Norms and Deformations': Towards a Theory of Sonata Form as Reception History," *Music Analysis* 27, no. 1 (March 2008): 170.

of Wingfield's desires for an alternative approach to assessing sonata form as it moves towards ahistorical application.

Backwards Compatibility

Harrison explains "backwards compatibility" through metaphor with digital electronics: essentially, every time a new technology is released, it must remain consistent with pre-existing hardware and software.⁴ A software update to fix a specific malfunction in a particular app, for example, cannot require that all users of that software purchase new phones or computers. Instead, the app's developers write its software in such a way that its current users can simply download the new software and continue using their own devices. Harrison's perspective of backwards compatibility allows him to sidestep explanation of how and when tonality perished and decenter common-practice harmonic procedures,⁵ but it also provides foundational support for his idea that contemporary music retains specific elements of common-practice composition.

To assess the secondary-parameter network's backwards compatibility, I will use the exposition from the first movement of Mozart's Flute Quartet in D-major as a case study. Essentially, this movement includes P, TR, and S zones, and a trimodular block. The goal of this discussion is to probe the secondary-parameter network's limits to understand what analysts might need to adjust to address broader stylistic repertoires. As will be discussed below, this task ultimately leads to an ahistorical discussion of sonata form that collapses differences of compositional style between earlier and later movements. Table 1 provides an overview of the secondary-parameter network for this movement. Throughout this

⁴ Harrison, *Pieces of Tradition*, 4-5.

⁵ Harrison, *Pieces of Tradition*, 5.

texture, and dynamics are the only secondary parameters that change. The following analysis

will focus on rhythms, texture, and dynamics for this reason.

Exposition	
P: mm. 1-12	-instrumentation: flute, violin, viola, cello
	-tempo: Allegro
	-time signature: 4/4
	-rhythms: half notes, eighth notes, sixteenth notes (theme); eighth
	notes (accompaniment)
	-texture: homophonic
	-dynamic: forte
TD 12.24	an anary an in the sthese territions
1K. IIIII. 13-24	instrumentation: same: brief focus on strings
	tempo: same
	-time signature: same
	-three signature. same
	-texture: homophonic contranuntal
	-dynamic: ninophome, contrapuntar
	-MC· m 25
TMB: mm. 26-43	TM ¹ : mm. 26-32
	-instrumentation: cello and viola; flute and violin
	-tempo: same
	-time signature: same
	-rhythms: eighth notes; eighth-note triplets (flute)
	-texture: varies
	monophonic (cello and viola) and homophonic (flute and violin);
	dissolves to contrapuntal (mm. 30-32)
	-dynamic: forte (lower strings) and piano (violin and flute); all forte
	after m. 30
	TM^{2} , mm 22.40
	instrumentation, oll instruments
	-instrumentation: an instruments
	-tempo. same
	-time signature. same
	-invulnis. Sixteenin notes (nute) and eight notes (strings), then
	texture: homophonic
	-dynamic: same
	TM ³ : mm. 41-43
	-instrumentation: same
	-tempo: same
	-time signature: same
	-rhythms: eighth-note triplets (flute); eighth notes (strings)
	-texture: contrapuntal (m. 41); homophonic (42-43)
	-dynamic: same
	-EEC: m. 43

Closing: mm. 44-	mm. 44-51:
65	-instrumentation: strings, then add flute
	-tempo: same
	-time signature: same
	-rhythms: eight and guarter notes:
	-texture: homophonic strings: contrapuntal with flute entrances
	-dynamic: <i>niano</i> , with <i>forteniano</i> 's
	mm. 51-58:
	-instrumentation: flute/violin trade melody: viola and cello
	accompaniment
	-tempo: same
	-time signature: same
	-rhythms: eight notes, quarter notes; fewer sixteenth notes
	-texture: homophonic
	-dynamic: forte
	mm. 59-65:
	-instrumentation: all instruments
	-tempo: same
	-time signature: same
	-rhythms: rhythmic stratification (flute: long notes and sixteenth notes;
	violin: sixteenth notes; viola: eighth notes; cello: whole notes)
	-texture: contrapuntal
	-dynamic: decrescendo to piano
	5 1

Table 1. The secondary-parameter network for the first movement of Wolfgang Amadeus Mozart's Quartet for Flute, Violin, Viola, and Cello, K. 285, I.

Example 1 shows an excerpt from the movement's P zone. It shows a homophonic contrapuntal texture, where the flute has the theme and strings provide the accompanimental materials. The melody includes a variety of rhythmic values, ranging from half notes to sixteenth notes, while the accompaniment focuses on eighth notes. Ben Duane would parse Example 1 into six textural strands, include flute, mm. 1-4; violin and viola, mm. 1-4¹; bass, mm. 1-4¹; viola and cello, mm. 4^{2.5}-5¹; violin, m. 5, and flute, m. 5.⁶ However, regardless of the number of textural strands, Example 1's homophonic nature is the key point. Example 1's dynamic value is *forte*. Even though this excerpt (and the whole movement, for that matter)

⁶ Ben Duane, "Thematic and Non-Thematic Textures in Schubert's Three-Key Expositions," *Music Theory Spectrum* 39, no. 1 (Spring 2017): 39.

includes a singable melody, the secondary-parameter network still prioritizes the music's constituent secondary parameters to define form.



Example 1. Wolfgang Amadeus Mozart, Quartet for Flute, Violin, Viola, and Cello, K. 285, I, mm. 1-4: The P zone is defined by rhythmic values ranging from sixteenth notes to half notes, homophonic texture, and forte dynamic.

Example 2 presents the beginning of the movement's transition (TR). A brief focus on strings defines the start of the new formal function, as well as the *piano* dynamic level. The cello is more active in Example 2 than in Example 1, and the primary melodic material is consistently busier. The violin and viola include some brief imitation that incites a contrapuntal texture, especially when the flute joins in the pickup to m. 17; the contrapuntal texture becomes increasingly pronounced as the TR continues. Despite the quieter dynamic, energy-gain occurs through the consistently more active rhythms and the contrapuntal texture.



Example 2. Wolfgang Amadeus Mozart, Quartet for Flute, Violin, Viola, and Cello, K. 285, I, the pickup to m. 13-19: The TR includes a brief change of instrumentation, *piano* dynamic level, and contrapuntal texture.

Example 3 shows an excerpt from the next section of music. The first half of m. 25 presents the medial caesura (MC, marked with an arrow in the example)), and the following material presents the beginning of a trimodular block (annotated with the bracket and labeled as TM¹ in the score). A change in instrumentation that divides the quartet into two pairs (cello and viola and violin and flute) plays a major role in establishing the new formal function, as does their respective dynamic levels of *forte* and *piano*. Additionally, the texture switches as these duos alternate, from, respectively, monophonic to melody and accompaniment. This excerpt is also the first time that all instruments play eighth notes, and the flute's switch to triplets is another defining rhythmic factor.



Example 3. Wolfgang Amadeus Mozart, Quartet for Flute, Violin, Viola, and Cello, K. 285, I, mm. 25-31: Instrumental duos, with alternating dynamics and texture, and eight-note rhythms characterize the beginning of the TMB.

Example 4 shows that TM² begins with an evaded cadence at m. 33; this example marks it with another bracket. Several secondary parameters change to establish the second part of the TMB. While the flute retains the melody, the strings' accompaniment changes from more active (and nearly contrapuntal) to a more standard accompanimental pattern at m. 33. Additionally, the flute's rhythms change from longer (half, quarter, and eight notes) to shorter (sixteenth notes) at the same time. Even though the changes within the TMB are more subtle, they can still help parse out its multiple parts.



Example 4. Wolfgang Amadeus Mozart, Quartet for Flute, Violin, Viola, and Cello, K. 285, I, mm. 31-34: Changes to accompaniment and rhythm define TM².

Example 5 shows that a brief TM³ brings new rhythms and contrapuntal texture. The flute presents eighth-note triplets and the strings return to eighth notes. The concomitant shift to a contrapuntal texture helps define this junction. The strings' consistent use of eighth notes from mm. 41-42 indicate that there is no formal boundary here, even though the flute's rhythm changes. M. 43 brings the EEC to create a TMB that leads to a continuous exposition.⁷



Example 5. Wolfgang Amadeus Mozart, Quartet for Flute, Violin, Viola, and Cello, K. 285, I, mm. 40-43: TM³ occurs with changes to the rhythms and accompaniment, and then quickly ushers in the EEC.

⁷ Hepokoski and Darcy, *Elements of Sonata Theory*, 176.

Example 6 presents the beginning of the closing zone. This zone has multiple internal sections, but I will only discuss the first one (Table 1 includes the secondary parameters that help define its second and third sections). The segment discussed in Example 6 is characterized by its opening instrumentation of strings, with the flute's later entrance, and use of eighth- and quarter notes throughout the zone (a few sixteenth notes, not shown, occur later). The texture is primarily contrapuntal, and fortepiano's punctuate the *piano* dynamic level.



Example 6. Wolfgang Amadeus Mozart, Quartet for Flute, Violin, Viola, and Cello, K. 285, I, the pickup to m. 44-47: The closing zone opens with strings, consistently uses eight- and quarter notes, has a contrapuntal texture, and a *piano* dynamic level that includes punctuating *fortepiano*'s.

Having applied the secondary-parameter network to a different style and genre than its original repertoire, I will now examine its weaknesses. These considerations will be important for the secondary-parameter network's reappropriation to other stylistic repertoires. While it can successfully define sonata form in a Classical-era sonata-form movement, it is not as sensitive as it needs to be, particularly in terms of instrumentation and rhythms.

While the secondary-parameter network can analyze functionally tonal sonatas, it must be fine-tuned, so to speak, to hone in on more nuanced secondary-parameter changes. Once established, the classical style leaves less room for secondary-parameter changes, so that, where changes do occur, smaller adjustments are as important as larger ones. In the classical style, the secondary-parameter network can examine only some of its constituent secondary parameters due to this stylistic constraint. The above analysis could not use tempo and time signature as defining formal features because these remain consistent throughout the movement. The romantic style might include more tempo fluctuations and time signature changes but, because both of these styles retain functionally tonal harmonic structures, prioritizing pitch relations remained the default choice and motivating analytical factor.

Genre plays a further limiting factor for the consideration of instrumentation as a secondary parameter. For the above analysis, a flute quartet is limited to four instruments, which is a quite limited number in comparison with the thirteen instrument sections in an orchestra. Furthermore, it follows the structure of a string quartet, which also limits instrumental possibilities: the first violin, or, here, flute, usually performs the melodic material in a quartet. Minute and momentary changes of instrumentation become increasingly important within the quartet paradigm—such as when the instruments paired up as flute/violin and viola/cello pairs (Example 3), or the flute entered after the violin and viola (Example 5). In the analysis of other eighteenth- or nineteenth-century works, changes of timbre could be a potentially helpful subcategory, as the same instrument (cello, for example) can achieve numerous sounds through different performance techniques (playing with the bow or *pizzicato*).

Combinations of rhythms are also more important than in late-twentieth-century repertoire, and the secondary-parameter network needs to be more sensitive to key rhythms that may only occur once or twice in each formal function. For example, Mozart's inclusion of a few eighth-note triplets in the above discussion is a key feature of m. 41 (Example 4)—akin to the import of Rautavaara's use of a sextuplet at the end of his transition (Chapter 2, Example 5) or quintuplet at the end of his retransition (Chapter 2, Example 5) or quintuplet at the end of his retransition (Chapter 2, Example 5). On the one hand, the latter was not included in the secondary-parameter network's findings because each formal function had its own defining set of rhythms (not to mention the fact that there were

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plenty of other secondary parameters to help define the formal function). On the other hand, in all formal functions in Mozart's quartet, most rhythmic values ranged from sixteenth notes to half notes, so that the inclusion of anything outside the usual rhythmic values (i.e., eighthnote triplets) is significant.

It is important to note the order in which rhythms occur because, when time signatures do not vary as much as in later repertoire, composers will be generally restricted to using rhythmic values native to their chosen time signature. For example, Mozart's movement discussed above includes numerous half notes, quarter notes, eighth notes, and sixteenth notes, and generally includes fewer dotted quarter notes and dotted half notes, for example, and triplets are less common. To be more specific, while Mozart's P zone and TMB both use sixteenth notes, they do so in different amounts and in conjunction with different rhythms. The first measure of Example 1 employs one sixteenth note, which connects a dotted eighth note and an eighth note, but the first full measure of Example 2 includes two sixteenth notes in between a dotted quarter note and eighth note. When composers have limited choices of which rhythms to use, the secondary-parameter network needs to be creatively nuanced to capture these restrictions.

To continue refining the secondary-parameter network's backwards compatibility, one next step for the project undertaken here is to apply the secondary-parameter network to Classical-era repertoire. Paul Wingfield and Julian Horton begin to bring repertoire by other composers, such as John Field, Jan Dussek, and Ignaz Moschales,⁸ into ongoing discussions of form, and scholars can expand the secondary-parameter network's scope in similar ways. This repertoire (both pre- and early Classical, and non-Viennese) requires greater scrutinization as scholars build a more encompassing theory of sonata form. It is entirely

⁸ Wingfield, "Beyond 'Norms and Deformations": 137-177; Julian Horton, "Formal Type and Formal Function in the Postclassical Piano Concerto," in *Formal Functions in Perspective: Essays on Musical Form from Haydn to Adorno*, ed. Steven Vande Moortele, Julie Pedneault-Deslauriers, and Nathan John Martin, (Rochester: University of Rochester Press: 2015), 77-122.

possible that additional secondary parameters might reveal themselves to be helpful as this branch of the project develops—harmonic rhythm, contour, or possible articulations, to pose a few examples, and maybe even types of non-chord tones. It is important to note that an analyst does not need to use the secondary-parameter network exclusively for sonata-form movements, and its application to movements of other formal structures might prove vital to its refinement.

As the scope of the secondary-parameter network expands, it will expand musicians' understanding of sonata form. As outlined by these potential applications, the secondaryparameter network allows for a broader and more diverse definition of what a sonata "is" or "might be," so that the repertoires of other composers and compositional styles can be analyzed and brought into music-theoretical discussions. While the theories of Sonata Theory and formal functions still accurately describe high Classical Viennese sonata forms, music theorists require additional tools to analyze increasingly diverse repertoires. The backwards compatibility of the secondary-parameter network offers one analytical tool to describe both high Viennese and non-Viennese sonatas. This dissertation begins this task by employing secondary parameters to understand how sonata form operates in a new repertoire, which can be conveniently applied to other repertoires.

Ahistorical Sonata Form

Broadening the secondary-parameter network's purview to include repertoire from a range of eras and geographies will create an understanding of sonata form that transcends that of a particular time or place. The secondary-parameter network's expansion responds to Wingfield's calls for an alternative approach to sonata form in several intriguing ways, one of which I will discuss here: the secondary-parameter network's expanded scope creates an ahistorical conception of sonata form.

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My primary intention for this definition is to prioritize a retrospective understanding of sonata-form trends. However, this goal does not necessarily preclude contemporaneous (historical) accounts of sonata form, as these help create a generalized understanding of the form. In other words, my ahistorical understanding of sonata form begins with modern scholarship and tracks similarities backwards through time. As all sonata-form repertoire is placed on a level stylistic playing field, so to speak, geographical distinctions also disappear into the background: my ahistorical definition is also pan-geographic. Including both qualifiers is a bit of a mouthful, so I will stick to the term "ahistorical" for this definition and know that it also neutralizes any geographic differences that might arise. The ahistorical definition of sonata form that I build here helps scholars understand sonata form's essence (discussed below).

In his review essay of *Elements of Sonata Theory*, Wingfield concludes by laying out criteria for an alternative approach to sonata from:

"As regards to structure, it seems clear that an alternative basic model to Hepokoski's and Darcy's 'generic layout' is called for. The authors' theories about function and make-up of 'S-space' notwithstanding, more detailed attention now needs to be paid to the differing roles of primary and secondary material and to the way the two interact, areas that Sonata Theory underplays. This in turn suggests that more equal emphasis must be given to the front-weighted as well as the goal-directed aspects of sonata form. As far as developments and recapitulations are concerned, more flexible approaches that are less reliant on the rotational metaphor are required. On the smaller scale, a theory of how sonatas work at the 'modular' level seems vital (as considered above, Hepokoski's and Darcy's approach to this dimension is somewhat informal). Moreover, contra Sonata Theory's preoccupation with tonal factors, the role of thematic and motivic processes needs to be worked fully into the equation. Finally, a new sonata model will have to be flexible enough to accommodate the overwhelming predominance, from the second quarter of the nineteenth century onwards, of characteristics that are exceptional in or absent from earlier sonata form movements: expositions that do not reach an unequivocal cadence in a secondary key, recapitulations that begin over a dominant pedal, end-directed tonal structures, and so forth.9

⁹ Wingfield, "Beyond 'Norms and Deformations": 170.
Wingfield here calls for a model that can account for repertoire that dates to after Sonata Theory's primary scope, but, earlier in his essay, he addresses how Hepokoski and Darcy do not really do justice to Clementi's Piano Sonata in B minor, Op. 40, no. 2 (1802).¹⁰ Furthermore, Wingfield identifies alternative tonal strategies in piano concerti by cosmopolitan composers such as John Field, Jan Dussek, Johann Cramer, Johann Hummel, Daniel Steibelt, Ignaz Moscheles, and Ferdinand Ries, among others.¹¹ Thus, in addition to embracing geographically diverse and later composers, the ideal account of sonata form would seek to maximize both qualities by embracing geographical as well as historical diversity. In other words, it would be both ahistorical and pan-geographic, at least in terms of western classical music: a truly comprehensive analysis of sonata form will be able to elucidate a sonata-form structure in any movement that is a proper candidate (i.e., is the first movement or a slow movement of a multimovement work), regardless of its composer, composition date, and location.

As laid out throughout the previous six chapters, the secondary-parameter network begins to move in this direction. It assumes a generic (general) sonata form that embraces the qualities which all sonata-form scholars identify: to put it bluntly, three main parts (exposition, development, and recapitulation), where the first includes three sections, broadly defined. Each section presents its own unique set of secondary parameters, whose changes tend to congregate at formal boundaries. Smaller changes to secondary parameters (the adjustment of one or two) define subsections. All western classical music includes the secondary parameters examined here: instrumentation, tempo, time signature, rhythms, texture, and dynamics are present in in some capacity, even if they are not always or

¹⁰ Wingfield, "Beyond 'Norms and Deformations": 142-144.

¹¹ Wingfield, "Beyond 'Norms and Deformations'": 144; see Julian Horton, "John Field and the Alternative History of the Concerto First-Movement Form," *Music & Letters* 92, no. 1 (February 2011): 43-83 for complementary analyses.

consistently specified. However, musicians have not always considered these aspects for analytical consideration.

The above discussion of backwards compatibility further pushes the secondaryparameter network in an ahistorical direction. The preceding analysis of Mozart's Flute Quartet in D-major explores how the secondary-parameter network can elucidate sonata form in Classical (functionally tonal) repertoire and demonstrates a preliminary finding that an ahistorical conception of sonata form is indeed possible, even if the criteria of secondary parameters needs to be refined for different musical styles. This analysis specifically shows how the secondary-parameter network can assess sonata form in diverse musical styles. Essentially, focusing on what all sonata-form movements have in common across sonata form's history is an essential foundation for this perspective: previous accounts of sonata form focus on individual styles and composers so that broader perspectives were not addressed. Caplin and Hepokoski and Darcy, for example, examine the high Viennese classical style, while scholars of twentieth-century music focus on a single composer.¹²

Scholars select analytical constraints for obvious purposes—it would be impossible to specialize in the music of all composers who write in sonata form—and scholars have holistically traversed numerous centuries' worth of sonata-form compositions. However, various scholars have sufficiently probed specific compositional styles, and, when this

¹² William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998); James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006); Charity Lofthouse, "Dialogues and Dialects: Rotation and Sonata Form in Shostakovich's Symphonies," *Theory and Practice* 41 (2016): 113-139; Charity Lofthouse, "Rotational Form and Sonata-Type Hybridity in the First Movement of Shostakovich's Fourth Symphony" (PhD diss., City University of New York, 2014); Julian Horton, "Formal Type and Formal Function"; Rebecca Perry, "Thematic Idiosyncrasy in Prokofiev's Early Sonata Forms" (PhD diss, Yale University, 2017), 22; Rebecca Perry, "Between the Signposts: Thematic Interpolation and Structural Defamiliarization in Prokofiev's Sonata Process," *Music Theory Spectrum* 42, no. 2 (Fall 2020): 193-206; Rebecca Perry, "House of Mirrors: Distorted Proportions in Prokofiev's Piano Concerto No. 1," in *Analytical Approaches to 20th-Century Russian Music*, ed. Inessa Bazayev and Christopher Segall (New York: Routledge, 2021), 54-70; Christopher Tarrant, "Breakthrough and Collapse in Carl Nielsen's *Sinfonia semplice," Danish Yearbook of Musicology* 41 (2017): 32-49; Christopher Tarrant, "Structural Acceleration in Nielsen's *Sinfonia espansiva," Music Analysis* 38, no. 3 (2019): 358-386.

knowledge is combined with the secondary-parameter network, it is now possible to create a stylistically neutral definition of sonata form. A rigorous examination of ahistorical sonata form would be worth its own dissertation, as would be a complete investigation of an overarching twentieth-century sonata form, so the following discussion outlines the work that would need to be done.

A complete overview of sonata-form scholarship would exceed the scope of the present task, so I will begin examining an ahistorical definition of sonata form by summarizing major contributions. Charles Rosen and William E. Caplin, of course, focus on music of the Classical era such as Haydn, Mozart, and Beethoven;¹³ James Hepokoski and Warren Darcy draw primarily on Mozartian repertoire for examples but include the other two composers as well.¹⁴ Julian Horton moves towards a theory of nineteenth-century sonata form through the works of Schmalfeldt and Vande Moortele,¹⁵ and study of John Field's piano concerti¹⁶ have already begun creating richer histories for sonata form's history. Scholars such as Hepokoski, David Grimely, Charity Lofthouse, Rebecca Perry, and Christopher Tarrant have examined early- to mid-twentieth-century repertoire by composers such as Carl Nielsen, Sergei Prokofiev, Jean Sibelius, and Dmitri Shostakovich.¹⁷ The field of sonata-form

¹³ Charles Rosen, *Sonata Forms: Revised Edition* (New York: W. W. Norton, 1988); and William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998).

¹⁴ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006).

¹⁵ Julian Horton, "Criteria for a Theory of Nineteenth-Century Sonata Form," *Music Theory and Analysis* 4, no. 2 (October 2017), 147-191.

¹⁶ Julian Horton, "John Field and the Alternative History of Concerto First-Movement Form," *Music and Letters* 92, no. 1 (February 2011): 43-83.

¹⁷ James Hepokoski, *Sibelius: Symphony No. 5* Cambridge: Cambridge University Press, 1993; David Grimely, *Carl Nielsen and the Idea of Modernism* (Woodbridge, UK: Boydell Press, 2010); David Grimely, "Modernism and Closure: Nielsen's Fifth Symphony," *The Musical Quarterly* 86, no. 1 (Spring 2002): 149-173; Charity Lofthouse, "Dialogues and Dialects: Rotation and Sonata Form in Shostakovich's Symphonies," *Theory and Practice* 41 (2016): 113-139; Charity Lofthouse, "Rotational Form and Sonata-Type Hybridity in the First Movement of Shostakovich's Fourth Symphony," PhD diss., City University of New York, 2014; Rebecca Perry, "Between the Signposts: Thematic Interpolation and Structural Defamiliarization in Prokofiev's Sonata Process," *Music Theory Spectrum* 42, no. 2 (Fall 2020): 193-206; Rebecca Perry, "House of Mirrors: Distorted

research in each century is clearly very well established, and it seems appropriate to begin taking a longer-term view of the genre.

I will propose three avenues of future research (in no particular order). First, it would be worthwhile to investigate the secondary parameters found in the examples of *Elements of* Sonata Theory and Classical Form to solidify an understanding of how secondary parameters operated in the high Viennese style. Caplin's and Hepokoski and Darcy's analyses focus on tonal parameters, though they both incorporate secondary parameters to some extent. Caplin includes some references to secondary parameters and formal function (see, for example, his discussion on continuation function¹⁸), but his focus remains on harmonic features. Inquiring into secondary-parameter patterns for beginning, mediating, and concluding formal functions would be another fruitful avenue of inquiry for the secondary-parameter network. Hepokoski and Darcy discuss various types of S zones (the "Bustling, Staccato, Energetically Galant, or Jauntily Self-Confident S" and the "Lyrically "Singing" or Gracefully *Cantabile* S¹⁹), but an account that prioritizes secondary parameters would bring more nuance to these interpretations. Essentially, explicitly addressing how secondary parameters operate in formal functions and Sonata Theory would bring a new perspective to their ideas. This possibility of research builds on the backwards compatibility discussed in the previous section, and shows that backwards compatibility is vital to building an ahistorical conception of sonata form based on secondary parameters.

Proportions in Prokofiev's Piano Concerto No. 1," in *Analytical Approaches to 20th-Century Russian Music*, ed. Inessa Bazayev and Christopher Segall (New York: Routledge, 2021), 54-70; Rebecca Perry, "Thematic Idiosyncrasy in Prokofiev's Early Sonata Forms," PhD diss, Yale University, 2017; Christopher Tarrant, "Breakthrough and Collapse in Carl Nielsen's *Sinfonia semplice,*" *Danish Yearbook of Musicology* 41 (2017): 32-49; and Christopher Tarrant, "Structural Acceleration in Nielsen's *Sinfonia espansiva,*" *Music Analysis* 38, no. 3 (2019): 358-386.

¹⁸ Caplin, *Classical Form*, 41.

¹⁹ James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006), 132-135).

Second, the secondary-parameter network can be employed to create a non-Viennesecentric conception of sonata form. In other words, the secondary-parameter network can help uncover geographically diverse sonata-form norms and to create numerous formal histories of the form. Do pockets of sonata-form styles pop up, so to speak, in different geographical regions, and what might these tell us about how a piece forms a sonata-form identity? Examining sonata-form movements by composers such as Jacob Kirckman (1746-1812), John Jones (1728-1796), and John Worgan (1724-1790) in Britain; Jacob Wilhelm Lustig (1706-196) and Johann August Just (ca. 1750-1791) in the Netherlands and Northern Germany; and Benedetto Marcello (1868-1739), Baldassare Galuppi (1706-1785), and Giovanni Marco Rutini (1723-1797) in Italy will help scholars illuminate these questions.²⁰

Third, even though authors of historical treatises on form primarily focus on phrases, the secondary-parameter network can corroborate their findings. For example, Anton Reicha analyzes the overture to Mozart's *Le Nozze di Figaro* in his *Traité de Haute Composition Musicale*.²¹ Though Reicha focuses on the types of ideas needed for his analysis ("clear, fresh, and distinct from each other"), analysis by the secondary-parameter network matches his indications for each theme.²² Examples 5a and 5b present the incipits of his "*motif de 16 mesures*" and "*idées accessoires: 24 mesures*," respectively, as the P zone and transition (TR), and Table 2 presents the secondary-parameter network's findings for these two expositional zones. While tempo, time signature, and dynamics are consistent between these two excerpts, their textures, instrumentations, and rhythms shift to mark the beginning of the TR (Reicha marks this as occurring on the pickup to m. 36, not on the downbeat of m. 35).

²⁰ Mark Kroll, ed., *The Cambridge Companion to the Harpsichord* (Cambridge: Cambridge University Press, 2019). See chapters 3, 4, 7, 8, 9, 11, 12, and 13 for overviews of keyboard composers in various European areas.

²¹ Anton Reicha, Traité de Haute Composition Musicale (Paris: Zetter, 1824), 236-261.

²² Reicha, Traité de Haute Composition Musicale, 236. "…les idées dans l'exposition soient claires, franches, et bien distinctes les unes des autres."

The subtlety of the shift in secondary parameters at the pickup beat to m. 36 demonstrates that this approach requires refinement to fully appreciate the nuances of earlier repertoire, but the present discussion suggest that secondary parameters are viable historical analytical components.



Example 5a. Wolfgang Amadeus Mozart, "Overture" from *Le Nozze di Figaro*, mm. 1-3: Mozart's P zone opens strings and bassoon playing eighth and quarter notes in unisons and octaves.



low strings, brass, woodwinds (various octaves)

Example 5b. Wolfgang Amadeus Mozart, "Overture" from *Le Nozze di Figaro*, mm. 35-38: Even though several secondary parameters remain consistent, instrumentation, texture, and dynamic help define the change to the TR.

P: mm. 1-35	TR: mm. 36-58
-instrumentation: Strings, bassoon	-instrumentation: violins' melody; strings
-tempo: Presto	and winds accompaniment
-time signature: 4/4	-tempo: Presto (same)
-rhythms: primarily eighth notes, some	-time signature: 4/4 (same)
quarter notes and rests	-rhythms: eighth notes, dotted half notes
-texture: monodic (one line)	-texture: homophonic
-dynamic: <i>piano</i>	-dynamic: <i>piano</i>

Table 2. A summary of the secondary-parameter network's findings for the P zone and TR of Mozart's "Overture" from *Le Nozze di Figaro*.

These avenues of the secondary-parameter network's future suggest that a formal theory based on secondary parameters is better positioned to assess a plurality of sonata-form styles within the broader genre. The secondary-parameter network focuses on what all sonatas share—that different parts of the sonata have different defining characteristics in addition to any tonal or thematic structure that might be present. In other words, each theme, no matter its style, brings its own secondary parameters that are ripe for analysis, and the secondary-parameter network's orientation towards this basic consistency creates an inclusive analytical environment. Essentially, the secondary-parameter network can serve as a bridge to connect eighteenth-, nineteenth-, and twentieth-century observations of sonata form. Obviously, all repertoire in the western classical style includes secondary parameters, but bringing these to the fore will allow scholars, musicians, audiences, and composes to engage with important historical questions about sonata form's history and remaking throughout time. An ahistorical (and pan-geographic) understanding of sonata form will allow scholars to develop its all-embracing alternative history. Having discussed the secondary-parameter network's backwards compatibility and potential to create an ahistorical definition of sonata form, I will consider some more immediate benefits of approaching repertoire with the secondary-parameter network.

Concluding Reflections (The Real Conclusion)

While this dissertation lays some of the groundwork for the study of form in the late twentieth century, it also captures the extent to which composers retained the influence of the western classical tradition—whether they sought to or not. Liebermann and Rautavaara both identify(ed) with the past; Denisov searched for new ways to create music. The presence of sonata form in all these composers' works attests to its continued influence and remaking. The fact that sonata form still emerges from and underscores their work, ranging from historically-oriented composers such as Lowell Liebermann to forward-thinking composers such as Edison Denisov, suggests its deep-seated location within Western Classical music. One of the benefits of approaching any twentieth-century repertoire via the secondaryparameter network is that it will extract any underlying sonata-form structure that is present.

The secondary-parameter network has the power to revolutionize how musicians conceive of form because it allows us to examine any musical structure without reference to

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(functional) tonality—something of inherent importance for western classical music. Its avoidance of tonal structures is of paramount importance in this regard. Even if all sonataform movements follow their own defining tonal rules (including, but not limited to, functional tonality), the fact that composers could (but did not need to) create their own pitchbased rules in the twentieth century requires an analytical system that does not depend on any pitch-based parameters. The secondary-parameter network offers a solution through its focus on elements other than pitch so that it can apply to structures of any pitched orientation. The secondary-parameter network's approach will help musicians update what it means for a movement to partake in the sonata genre in any musical era.

The secondary-parameter network also has several benefits for an audience, broadly construed. First, for a non-specialized audience, it can be easier to listen for changes of tempo, instrumentation, dynamic, and musical texture (and sometimes time signature) than it is to listen for changes of key or tonal structure. This fact means that all audience members can listen to western classical music through secondary parameters—which may even make western classical music more accessible and interesting for non-specialized audiences. If the secondary parameters discussed here are articulated in non-technical terms, listeners without exclusive musical training will have specific items to listen for throughout a given piece of music. In other words, when a listener is told to listen for when the music speeds up or slows down, gets louder or quieter, or starts to use different instruments, she is given a concrete listening strategy through which she can understand what she hears. A perspective of musical form based on the secondary-parameter network thus permits anyone, regardless of musical background, to understand music musically. Though the present project focused on western classical music, this approach can be applied to many more musical styles.

Second, it facilitates the creation of a ground-up understanding of a piece of music's form. Because the secondary-parameter network will identify any changes in formal section

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and repetition, it can account for all music that has discrete sections. From the preceding discussion, this is obviously true of sonata-form movements, but this statement is also true for other small- and large-scale structures, such as minuet and trio, rondo, and even single-movement forms. Each structure will offer and return different sets of secondary parameters based on where new and familiar materials occur, respectively. For example, an ABACA rondo form will present a unique group of secondary parameters at its beginning for the A section, then a new set with the B section, a return to the A section's secondary parameters, then a third set of secondary parameters for the C section, before a return to the A section's materials. Its ability to identify developmental techniques also helps distinguish between rondo and sonata forms.

The secondary-parameter network will be an especially powerful tool for analysis of late-twentieth-century and twenty-first century works, as composers often made compositional choices that would suggest the avoidance of a single explicit form. For example, composers wrote symphonies for orchestra and choir (Lowell Liebermann's Second Symphony (1999)) or vocal soloist (Isang Yun's Fifth Symphony (1987)); and many also wrote one-movement symphonies with multiple sections (Edison Denisov's Second Chamber Symphony (1994), Einojuhani Rautavaara's Fifth Symphony (1985), and Isang Yun's First Chamber Symphony (1987)).

Thus, the secondary-parameter network can offer new ways to listen to music and consider its formal structures. While this dissertation focused on sonata form in latetwentieth-century symphonic repertoire, this perspective can be applied to any body of repertoire. By avoiding all reference to tonal structures, whether functional or not, the secondary-parameter network capitalizes on the presence of secondary parameters in all western classical repertoire—as the above analysis of Mozart's Flute Quartet in D-Major, K. 285, demonstrated, it will consistently capture changes of dynamic, instrumentation, and

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rhythms, and it affords the analyst sufficient creative flexibility to fit other (non-latetwentieth-century) repertoires. In its focus on work by Edison Denisov, Lowell Liebermann, Einojuhani Rautavaara, Christopher Rouse, and Isang Yun, this dissertation showed the continued influence of sonata form in the late twentieth century—whether composers were sought it out and were aware of it or not. Virtually all western classically trained musicians would agree that sonata form was of paramount import in music of the eighteenth and nineteenth centuries, and the secondary-parameter network's findings in this dissertation suggests that its vitality continued throughout the duration of the twentieth century.

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