Augmented Sixth Chords in Tchaikovsky's Orchestral Music

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Abstract

In 1871, Tchaikovsky authored a harmony text entitled *Guide to the Practical Study of Harmony* (hereafter: the *Guide*). Surprisingly, the staples of literature that investigate the composer's style tend not to thoroughly consider the *Guide* in their analytical interpretations of his music. When the *Guide* is referenced, Tchaikovsky's recommendations are occasionally misconstrued by the assumption that modern approaches to chromatic harmony topics such as augmented sixth chords can be equated with Tchaikovsky's teachings. Indeed, Tchaikovsky's treatment of augmented sixths contrasts greatly with modern theoretical frameworks.

This thesis therefore investigates Tchaikovsky's theoretical conceptions of augmented sixth chords, as laid out in the *Guide*, and applies the resulting principles to interpret examples of these chords in the composer's orchestral music. The body of the thesis features three main sections. The first (Chapter 2) unpacks Tchaikovsky's pedagogy in the *Guide*, providing an indepth analysis of his chapter on augmented sixth chords. This chapter also briefly evaluates intersections and conflicts between Tchaikovsky's and modern understandings of these chords, showing logical extensions to his rules. Chapter 3 reinterprets modern analyses of augmented sixth chords in Tchaikovsky's music using the composer's theoretical principles, providing essential nuance that is otherwise omitting by modern approaches. Finally, Chapter 4 presents an in-depth analysis of augmented sixth chords in the first movement of Tchaikovsky's Sixth Symphony.

Overall, this thesis shows that Tchaikovsky is an essentially contrapuntal composer: his theory is flexible and prioritizes voice leading and motivic/melodic design. Tchaikovsky's augmented sixth chords thus cannot be forced into any one harmonic functional category, as their

contrapuntal behaviour affords them a unique flexibility to adopt motivic, formal, and contrapuntal functions. The composer's augmented sixth chords are versatile and inextricably linked with the motivic, thematic, and contrapuntal design of the orchestral works studied in this paper. They tend to contribute continuation function, often creating momentum in local development passages and large development sections. As such, they contribute to formal, contrapuntal, and motivic processes on various levels of structure, including everything from foreground colouration and embellishment, to middleground prolongation and phrase rhythm, to the articulation of large-scale formal boundaries and significant structural modulations.

Lay Summary

Tchaikovsky, a composer active in the 19th Century, wrote a harmony textbook, providing an exciting opportunity to glance behind the scenes into his original approaches to composition. This thesis aims to use this textbook to first understand Tchaikovsky's perspective on harmony, focusing specifically on "augmented sixth chords" (which are defined in the thesis), and then to apply his compositional principles in an analysis of his music. My research shows that these chords generate energy, momentum, and tension, propelling the music forward. Moreover, I find that applying Tchaikovsky's principles to his music gives us insight into elements of musical construction that would otherwise be missed with modern approaches to analysis, as Tchaikovsky's conception of these versatile chords differs greatly from modern teachings. Finally, I show that these chords are closely intertwined with the melodic design of a piece, defined primarily by how their component parts behave.

Preface

This thesis is the original, unpublished, and independent work of the author, Kelsey Lussier.

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Chapter 1: Introduction

Pyotr Ilyich Tchaikovsky (1840-1893) is perhaps best known for his popular works, such as his ballets and programmatic works, as well as his later symphonies. However, there is less appreciation of his compositional strategies. While there are some staples of the literature that analyze his compositional style (e.g., Zajaczkowski (1987) and Hundsnes (2014)), they almost exclusively employ modern theoretical terminology and approaches in elucidating the nuances of his craftsmanship. While it is important to use the appropriate tools at hand, these sources tend neither to thoroughly consider nor incorporate Tchaikovsky's harmony treatise, entitled A Guide to the Practical Study of Harmony, of which chromatic harmony and counterpoint are a strong focus. In instances where it is referenced, such as in Ellis (2016), Tchaikovsky's recommendations may be misconstrued by the assumption that modern approaches to certain chromatic harmony topics can be equated with Tchaikovsky's teachings. One such topic is augmented sixth chords. While most modern approaches give priority to the predominant function of these chords, with some attention also given to their dominant function, Tchaikovsky's pedagogy treats them in a significantly contrasting way. Little of the theoretical literature systematically evaluates the composer's pedagogy on augmented sixth chords, and, to my knowledge, there is no work that then applies the resulting principles as analytical tools to investigate the uses of augmented sixth chords in Tchaikovsky's music. This is exactly the purpose of this study. The primary goal of this thesis is thus twofold: to unpack Tchaikovsky's pedagogy of augmented sixth chords and to apply his pedagogical principles as analytical tools to explore how the composer uses augmented sixth chords in his music.

The thesis is structured in three main sections. The Chapter 2 provides an in-depth analysis of Tchaikovsky's augmented sixth chord pedagogy and contextualizes some of his principles with theoretical conceptions that appear in other sections of the treatise. This chapter also briefly evaluates intersections and conflicts between Tchaikovsky's and modern approaches to analyzing augmented sixth chords. It also aims to complement Tchaikovsky's approach with appropriate literature that elucidates elements of formal function, voice leading, and motivic process involving augmented sixth chords, including Gauldin (2004), Zajaczkowski (1987), and Straus (2003).¹ Finally, this chapter discusses how Tchaikovsky's theory interacts with broader concepts such as harmony, counterpoint, and harmonic function. This shows that Tchaikovsky did not limit the use of augmented sixth chords to specific harmonic progressions or contexts. Instead, their function is dependent on their interaction with elements such as contrapuntal and motivic structure, formal design, phrase structure, orchestration, and meter, and they can relate to one another within a unified musical context. Chapter 3 demonstrates how the theoretical framework described in Chapter 2 can be readily applied in analysis. It reinterprets previously published, modern analyses of augmented sixth chords in Tchaikovsky's orchestral music using the composer's concepts and terminology. The results of these analyses demonstrate the ease and flexibility with which these principles can be used in analysis. However, the consideration of individual examples from several works does not allow analytical comparison of augmented sixth chords within a single musical work. To that end, Chapter 4 presents an in-depth analysis of augmented sixth chords in the first movement of Tchaikovsky's Sixth Symphony.

Together the chapters will show that Tchaikovsky is an essentially contrapuntal composer. His augmented sixth chords are inextricably integrated with the motivic, thematic, and contrapuntal structure of the orchestral works studied in this paper. As such, they contribute to formal, contrapuntal, and motivic processes on various levels of structure, including everything

¹ Although Straus' repertoire focus differs, his voice leading methodology complements Tchaikovsky's approach.

from foreground colouration and embellishment of structural chords to middleground prolongation and phrase rhythm, to the articulation of large-scale formal boundaries and significant structural modulations.

Chapter 2: Augmented Sixth Chords in *The Guide to the Practical Study of Harmony*

2.1 – Introduction and Methodology

This chapter answers the question: How does Tchaikovsky recommend that augmented sixth chords be used in composition? Before diving into analysis, the following discussion unpacks Tchaikovsky's pedagogy, extracting useful insights about Tchaikovsky's theoretical conceptions and compositional priorities. Although focusing mostly on the "Chords of the Augmented Sixth" chapter, the discussion incorporates other elements from elsewhere in the treatise, explaining and contextualizing some of his compositional rules. Most importantly, the aim of this chapter is to set the stage for musical analysis of augmented sixth chords in Chapters 3 and 4. It provides a systematic, in-depth examination of Tchaikovsky's compositional recommendations, aiming to explain how the composer understood augmented sixth chords to behave in real musical examples. Additionally, this chapter briefly considers how Tchaikovsky's theory both intersects and conflicts with modern approaches to augmented sixth chords. While the goal of this study is not a systematic comparison, it is useful to juxtapose Tchaikovsky's approaches with modern ones to show the often-contrasting nuances of each approach. Additionally, this chapter incorporates the work of scholars who have thoroughly studied Tchaikovsky's music (Zajaczkowski, 1987) and its motivic techniques (Gauldin, 2004), as well as a historical survey of augmented sixth chord uses across Western art music (Ellis, 2016). Applicable scholarship from a contrasting repertoire (Straus, 2003) is also included, because its treatment of voice leading aligns with Tchaikovsky's compositional principles. The inclusion of these additional sources supports speculation of logical extensions to some of Tchaikovsky's

principles and the discussion of how his pedagogy relates to modern theoretical concepts such as harmony, counterpoint, and harmonic function.

2.2 – Tchaikovsky's Augmented Sixth Chords

In the opening of the 27th chapter of his theoretical manual A Guide to the Practical Study of Harmony (referred to throughout this paper as the Guide, for short), Tchaikovsky describes augmented sixth chords as "...nothing more than the inversions of certain chords resolving to the tonic triad, having the second scale degree lowered" (Tchaikovsky [1871] 2005: §98). The "certain chords" that he references are the leading tone diminished triad, the dominant seventh, and the leading tone fully diminished seventh chord. Tchaikovsky lays out the diatonic origins and chromatic alterations necessary to derive the augmented sixth chords in Tables 1a and 1b. Table 1a outlines three principal types of augmented sixth chords, while Table 1b details a fourth type whose chromatic alteration differs from those in Table 1a. The chords in these two tables give construction and voicing in C major to reflect Tchaikovsky's musical examples, reproduced in the discussion below. Grey highlighted pitch classes in the third column indicate the identity note that defines what we would consider to be the "nationality" of the chord (Italian, French, German—terminology that postdates the Guide). Both tables also include the shorthand labels that I will use to refer to each type of augmented sixth chord throughout the following discussion.

Since one of my primary goals is to compare and apply Tchaikovsky's pedagogy to his practice, it is important to take into consideration his language² and labelling system, taking care

² Considering that the edition to which I refer is a double translation from the original Russian to German, and then from German to English, the word "language" here takes a more nuanced meaning that is intended to reflect the implicit prioritization of counterpoint, especially figured bass, in these augmented sixth chord notations and labels throughout the *Guide*. As they both point out in their reviews of this text, Walter Piston (1971) and Tama Kott (2007) highlight that the mechanics of the language arising from the double translation are challenging and the writing is often grammatically incorrect, which can obfuscate the original intended meaning of the prose. While this may, to an extent, inhibit close textual analysis, Kott points out that the translators James Liebling and Emil Krall

not to impose anachronistic concepts or terminology that would obscure his original nuances. Notably, since he prioritizes figured bass in his description of these chords, I will identify each type of augmented sixth chord by his figured bass labels; the rightmost column aims to communicate this information by using "Aug" in place of a root, followed by the label. The Roman numerals used to indicate the origin chords simply represent the fundamentals (i.e., roots) that Tchaikovsky uses to describe these harmonies in his treatise and should not be taken to imply any particular harmonic function.

Table 2.1a: The three principal types of augmented sixth chord

Diatonic origin	Specified inversion of	C major spelling with $\downarrow \hat{2}$	Tchaikovsky's figured bass label (§98)	Modern name	Shorthand
	ongin				
vii ^o	First	$D\flat-F-F-B$	"Augmented chord of the sixth"	Italian +6	Aug ⁶
V^7	Second	$D^\flat - F - G - B$	"Augmented chord of the fourth and third"	French +6	Aug ⁴
vii ^{o7}	First	D b - F - A b - B	"Augmented chord of the sixth and fifth"	German +6	Aug_5^6

Table 2.1b: A fourth type of augmented sixth chord

Diatonic origin	Specified inversion of	C major spelling with $\#\hat{2}, \#\hat{4}, \text{ and } \hat{\flat}\hat{6}$	Tchaikovsky's figured bass label (§104)	Modern name	Shorthand ³
ii ⁷	Second	Ab - C - D# - F#	"Augmented chord of the fourth and third with doubly augmented fourth"	Enharmonic German +6 with a doubly augmented fourth	#6 Augx4 3

Crucially, Tchaikovsky explicitly states that the normal resolution of these chords is to

the tonic triad. This is clearly demonstrated in every of Tchaikovsky's musical examples: each

have nevertheless logically and successfully preserved Tchaikovsky's original terminology (19). Tchaikovsky's language, with all its nuance under translation, can still be analytically applied throughout this paper and is essential for understanding his theoretical concepts.

³ Although Tchaikovsky's figured bass description of this chord is #6/#4/3, the x4 in this shorthand label accounts for the doubly augmented fourth above the bass. The distinction between a doubly and singly augmented fourth in the figured bass shorthand of this augmented sixth chord type becomes important in the analysis of Tchaikovsky's Symphony 6 in Chapter 4.

augmented sixth chord is spelled, prepared, and resolved according to a C major tonic. This is an important divergence from modern theoretical approaches to augmented sixth chords, which usually insist that the normal resolution of the Italian, French, and German augmented sixth chords (the modern three principal types) is to the dominant triad, including the cadential sixfour. As discussed in more detail in Section 2.5.1 of this paper, this prompts the question of how Tchaikovsky conceives of tonic as both an individual sonority and as a more abstract harmonic class. Discussion of the quality of the resolving tonic chord and "modulatory degressions [sic]" versus full modulations (§103) sheds light on the flexibility in scope of Tchaikovsky's concept of "tonic" in the context of augmented sixth chords. It reveals that the resolving tonic chord may be classified as such on a local or global scale and that the augmented sixth chord and its resolution may signal a shift between local (and global) tonics. Therefore, while there is potential for overlap with modern theoretical approaches (i.e., in cases where the local tonic that resolves an augmented sixth chord is also the global dominant), Tchaikovsky's normative resolution of augmented sixth chords to tonic (of any scope) increases the number of contexts in which these chords may regularly occur. The broad definition to the concept of "tonic" allows augmented sixth chords to be interpreted across levels of structure and encourages investigation of their integration with various musical processes, such as musical form, harmonic structure, contrapuntal and motivic structure, and harmonic colouration.

2.3 – Preparations and Resolutions

After identifying their scale-degree content and diatonic origins, Tchaikovsky contextualizes the augmented sixth chords by demonstrating various strategies that he considers appropriate for their preparation and resolution. However, as the following discussion will demonstrate, the composer gives limited indication of the role and position of these chords

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within a phrase or specific harmonic progression, which leaves ample room for analytical exploration.

The techniques he prescribes for the preparation of augmented sixth chords in nonmodulating contexts are similar across all four types, emphasizing smooth, often semitonal voice leading in all voices and for all types. To begin, Tchaikovsky demonstrates that Aug⁶ and Aug⁴ can both be prepared in three different ways: (1) by their respective origin chords in the specified inversions (consult the first two rows of column 2 in Table 2.1a), (2) by the tonic chord in the same inversion as the tonic that resolves them, or (3) by triads ii or IV. Figure 2.1 shows each of these three techniques for the Aug⁶, as numbered. The first measure of preparation type 3 makes use of the supertonic triad, while the second measure demonstrates preparation by the subdominant. Figure 2.2 similarly illustrates Tchaikovsky's realization of each approach to the Aug⁴₃.



Figure 2.1: Example 283 (§99). Tchaikovsky's suggested preparations and resolutions of Aug⁶ (Roman numerals added).





added).

In the approach to Aug⁶ from the supertonic triad (m. 3 of Figure 2.1), Tchaikovsky specifies that the third of ii should be doubled. The first and second measures of preparation type 3 in Figure 2.2 show that the Aug_3^4 can be prepared by two different voicings of the supertonic triad, the first with a doubled third and the second with a doubled fifth. Tchaikovsky's specific prescription of (multiple) doublings in these preparations is one of the first of many indications of the high priority he gives to maintaining correct voice leading throughout his examples in the treatise. According to section $(\S)9$, "correct" voice leading avoids illegal motions (i.e., consecutive fifths or octaves, dissonant leaps, and cross-relations) and minimizes the size of melodic intervals between voices. The composer prioritizes common tones and stepwise voice leading as the main means of connecting chords. Common tones between triads must be kept within the same voice (\$11), and when there are none, contrary or oblique motion should be employed (§13). This is often described by modern scholars as smooth voice leading. In Schoenberg's harmony treatise, a context closer to Tchaikovsky's time, the German composer states that Bruckner describes this voice leading principle as "the law of the shortest way" (Schoenberg, [1954] 1969: 4).

The prescribed preparations for the Aug_5^6 chord depend upon the role of the chord within a progression. Tchaikovsky states that in cases when the Aug_5^6 functions as a "passing chord," it is prepared by its origin in the specified inversion, whereas when it functions as an "actual chord," it is prepared by the subdominant triad (§101). His prose blurs the "passing chord" vs. "actual chord" dichotomy, seeming to suggest a causal link wherein the function of the augmented sixth chord in the phrase determines its preparation.⁴ However, discussion of the voice leading in Example 288 (Figure 2.3) shows that this relationship between preparation and functional categorization is reversed.



Figure 2.3: Tchaikovsky's Example 288 (§101). Suggested preparations and resolutions of the Aug_5^6 chord in both its passing and actual forms (Roman numeral annotations added).

Section A of Figure 2.3 realizes the passing version of the Aug_5^6 , while Sections B and C realize the Aug_5^6 functioning as an "actual chord" (§101). The "passing" motion in A is the chromatic voice leading in the bass that connects the third (D) of the origin chord (vii⁶₅) to the root of the

⁴ "The augmented chord of the sixth and fifth is used either as passing chord or as an actual chord; in the former case it is prepared by its original form, in the latter by the sub-dominant triad" (§101). This ambiguity is perhaps a consequence of the double translation.

tonic; the fundamental does not change between the vii ${}_{5}^{6}$ and the Aug ${}_{5}^{6}$. The examples with Aug ${}_{5}^{6}$ s that function as "actual chords" feature leaping basslines with roots that change between the preparation and the augmented sixth. It becomes clear from the examination of these examples that the apparent role of the augmented sixth chord within a progression is a direct result of the voice leading (i.e., passing or leaping bass line) and whether the root differs between the preparation and the Aug ${}_{5}^{6}$.

Finally, for details on the preparation of the $\operatorname{Aug}_{x4}^{#6}$ we must rely solely on Tchaikovsky's relevant musical example, as there is no corresponding prose on this topic. As can be seen in Figure 2.4, his realization shows the $\operatorname{Aug}_{x4}^{#6}$ chord prepared by its origin (ii⁴₃), creating chromatic passing motion in the bass between $\hat{6}$ and $\hat{5}$ in the resolution of the augmented sixth chord to the $\operatorname{tonic}_{4}^{6}$. Note also that each instance of the origin is approached with a common tone in the bass, a property that is not explicitly mentioned by the composer but one that is consistent with the principles of smooth voice leading processes he emphasizes. This example also presents different types of smooth outer-voice motion: in the first section of Figure 2.4 the soprano remains on C, while the final section features ascending stepwise motion with a chromatic intervention by the

#6 Aug_x4. 3



numeral annotations added).

About the resolutions of these four types of augmented sixths Tchaikovsky is equally thorough. With continued focus on voice leading, he maintains that all three of the principal types of augmented sixth chord (i.e., those listed in Table 1a) resolve without exception to root position tonic (§98-§101). This is an anomalous procedure compared to most modern theoretical approaches to augmented sixth chords, which prescribe each type's resolution (except for the common tone German sixth and the "Dominant French sixth" (Aldwell, Schachter, & Cadwallader, 2011: 581) chords) to root position V, often achieved through an intervening cadential $\frac{6}{4}$.⁵ Whereas these modern sources (consult footnote 4) describe resolution directly to root position tonic as abnormal and relatively uncommon, it is a defining pillar of Tchaikovsky's theory of augmented sixth chords and a normative procedure. The resolutions of Aug⁶ and Aug⁴ are demonstrated above in Figure 2.1 and Figure 2.2, with smooth and correct voice leading.

⁵ See, for example, Aldwell, Schachter, & Cadwallader (2011: 561), Laitz (2015: 572), Kostka, Payne & Almén (2017: 386-7), and Burstein & Straus (2016: 414).

By contrast, the Aug_5^6 does not resolve to root position tonic so easily, as doing so directly inevitably creates parallel fifths. The composer suggests two workarounds for this issue. The first (Figure 2.5) is to transform Aug_5^6 to Aug_3^4 by prematurely resolving the fifth above the bass down by step to the root of the dominant chord. The resultant Aug_3^4 can then resolve to root position tonic without difficulty, as demonstrated above (Figure 2.2). The second strategy (Figure 2.6) is to suspend the third and fifth above the bass (the identity note and $\hat{4}$) while resolving the augmented sixth interval outwards by semitones (as expected) to an octave consisting of two tonic notes. This suspension creates an intervening minor $\frac{6}{4}$ chord that then resolves correctly to root position tonic (§101). Note that this is not the same procedure as the modern recommendation that German augmented sixths resolve to root position V through the cadential $\frac{6}{4}$. While the $\frac{6}{4}$ portions of both the cadential $\frac{6}{4}$ and this progression share characteristics (i.e., they are contrapuntally generated, elaborate their respective goal harmonies with a suspension pair, and each have roots⁶ that are a perfect fifth below that of their respective goal harmonies), the intervening $\frac{6}{4}$ chord and its resolution to tonic in the Aug⁶₅ progression is not necessarily an idiom suggestive of a cadence, whereas the cadential $\frac{6}{4}$ is. Additionally, if analyzed as a vertical chord its root is $\hat{4}$, not $\hat{1}$ and its quality is consistently minor on account of the suspended $\downarrow \hat{6}$ from the Aug⁶₅, an essential ingredient that lends the diatonic origin of the Aug⁶₅ its fully diminished quality. Finally, Tchaikovsky's parallel equivalent of the cadential $\frac{6}{4}$

⁶ Note that although these are both essentially contrapuntal elaborations of the goal harmonies, they can be analyzed as vertical harmonies with roots because their pitch class components form a triad. They are briefly analyzed as such here for the purpose of systematic comparison and are understood to be functioning entirely contrapuntally in real musical contexts.

progression is the prolonged cadence of the first class (§49, discussed below) that features $I_4^6 - V_3^5$, which is not the suggested succession of harmonies here.



Figure 2.5: Tchaikovsky's Example 286 (§101). The Aug_5^6 - Aug_3^4 - I resolution strategy (Roman numerals added).



Figure 2.6: Tchaikovsky's Example 287 (§101). Resolution to root position tonic with an intermediary 6/4 chord by temporally displacing the resolution of the augmented sixth interval and the third and fifth above the bass (Roman numerals added).

While Tchaikovsky specifies how to voice lead to and from the principal types of augmented chords, he does not give any indication of where they should occur within a phrase. However, in his discussion of the resolution of the $\operatorname{Aug}_{x4}^{\#6}$, he gives the first indication of phrase $_{3}^{\%}$ context, explaining that this type of augmented sixth chord commonly precedes the tonic $_{4}^{6}$ in

#6

cadences of the first class (\$104). So, to more fully understand how the Aug_{x4} arises in this

prescribed context, it is necessary to become familiar with cadences in this treatise. Tchaikovsky restricts the harmonic members of an authentic "cadence" or "close" to only the dominant chord (with an optional seventh) followed by the tonic (§48, §139). However, he acknowledges that cadential progressions are often longer than two chords and outlines two classes of "prolonged cadences" (§49): progressions of four chords that include the cadential $V^{(7)}$ – I preceded by a subdominant- and a tonic-category chord. The class of the progression depends on the order in which the preceding tonic- and subdominant-category chords appear before V and their respective metric placements. Cadences of the first class feature the chord from the subdominant category occurring before the pre-cadential tonic. The subdominant category chord must occur on a metrically unaccented beat and can be any one of the following: ii, ii⁶, IV, IV⁶, ii⁷, ii⁶₅, and ii_{3}^{4} . The following pre-cadential tonic chord is a metrically accented tonic $\frac{6}{4}$ that changes to root position $V^{(7)}$, which then moves to the root position tonic that completes the cadence (§49). Cadences of the second class reverse the order and metric emphasis of the first tonic- and subdominant-category chords in the progression, while also permitting the initial tonic to take the form of other chords within the tonic category: I, I⁶, vi, or vi⁶ in major and i, i⁶, VI, or VI⁶ in minor (§49). This information helps contextualize the prescribed preparation and resolution of

the Aug_{x4}, describing how it is the result of chromatic passing motion that connects the ii_3^4 and 3

tonic $\frac{6}{4}$ chords in cadences of the first class.

With this context we can understand the progressions in Example 291 (Figure 2.4), which are relatively brief compared to cadences of the first class. This example can be split into two halves, each containing two pairs of measures. The first pair in each half provides a model,

without the augmented sixth chord, of the beginning of a cadence of the first class that employs ii_{3}^{4} . The ii_{3}^{4} is metrically unaccented and resolves directly to the accented tonic $\frac{6}{4}$. The second pair in each half reproduces the model including the Augx4, which is inserted between the ii_{3}^{4} and the $\frac{46}{3}$. The rest of the expected cadential progression of the first class (V⁽⁷⁾ – I) is omitted in all cases. The first half of this example approaches the ii_{3}^{4} with IV⁶ and maintains common tones in the soprano, emphasizing the smooth outward connections between the chords within the progression, both with and without the augmented sixth. The second half of this example illustrates a model progression that features stepwise ascending melodic motion in the soprano, burying the common tone in the alto voice. The resultant voicing of the Augx4 in the final two 3 measures would aurally emphasize the chromatic passing motion that is responsible for generating the chord by creating contrary motion between the outer voices.

The consistent omission of the expected V–I cadential progression at the end of each pair of measures Example 291 (Figure 2.4) is potentially crucial. On the one hand, the apparent purpose of this example is to demonstrate and emphasize how organically the Aug_{x4} arises $\frac{#6}{3}$ arises through passing motion from ii⁴₃ to I⁶₄. Given that in §106 Tchaikovsky cites the common context of prolonged cadences of the first class, of which ii⁴₃ – I⁶₄ constitute a possible first half, perhaps he omits the V–I cadences to avoid redundancy, as they are implied by the prose. On the other hand, since Tchaikovsky does not restrict occurrences of these chords to the first-class cadence context,⁷ it seems equally likely that measures 3-4 and 7-8 of Example 291 are actually

⁷ These chords are described as being "...*frequently* applied in cadences of the first class" (§106, emphasis mine), which suggests common, but not restricted use in this context.

illustrating complete progressions that are optionally followed by $V^{(7)} - I$. This opens the possibility that the Augx4 can arise as a result of chromatic passing motion between two chords 3 whose roots are connected by a descending whole tone (i.e., not necessarily only 2-1) in cadences of the first class as well as other contexts, such as in local tonicizations (discussed below), sequences, or for motivic reasons. This is especially plausible if the resolving $\frac{6}{4}$ chord were to be metrically unaccented because its unstressed position would not necessarily suggest that the progression continues into a prolonged cadence of the first class. This provides additional evidence for the flexibility in scope of the tonic that resolves the Augx4; the $\frac{6}{4}$ chord that resolves the Augx4 is certainly a local tonic chord regardless of its relationship to the global 3

tonic (keeping in mind that these may be the same).

It is important to consider, however, that Tchaikovsky is quite strict in his pedagogical treatment of $\frac{6}{4}$ chords. Crucially, the $\frac{6}{4}$ inversion of the triad does not necessarily undermine its tonic identity: it is still articulating the tonic despite its rather weak inversion. He suggests four primary cases in which $\frac{6}{4}$ chords may be appropriately employed in addition to cadences of the first class, three of which feature the triad in a metrically unaccented position as only part of an underlying contrapuntal process: arpeggiating, passing, and pedal $\frac{6}{4}$ chords (§47, items 1-3). The fourth case features a metrically accented $\frac{6}{4}$ chord, but it is the product of suspensions in the upper voices, prepared by the root position version of the same triad and resolving to the triad whose root is a fifth above (§47 item 4).⁸ If the progressions in Example 291 are to be considered

⁸ This is analogous to the modern cadential $\frac{6}{4}$.

complete and the resolving $\frac{6}{4}$ is both metrically accented and understood as the tonic (local or global), then there logically must be a strong contrapuntal or motivic reason, such as adhering to sequential or motivic logic, or if it is a product of strong voice leading. Tchaikovsky implies this in the final two paragraphs of §47, identifying that these uses are of a general nature and imploring the "...talented pupil to follow the promptings of his musical instinct and occasionally overstep the theoretical limits herein set down" ($\S47$). He argues that such overstepping, when executed correctly (i.e., following musical instincts), can reveal other effective uses of the $\frac{6}{4}$ triad not detailed in his descriptions. As evidenced by Chapters 4 and 33 of this text,⁹ this could have been a caveat specific to any of the strict rules Tchaikovsky lays out in the Guide. However, it's placement with instruction on the uses of $\frac{6}{4}$ triads suggests the inherent flexibility of the triad when fully integrated into a real musical context. The rigidity of the general uses and the flexibility of the talented student to follow their musical instinct complement one another and suggest that analysis could reveal additional uses of $\frac{6}{4}$ chords in relation to augmented sixth chords, perhaps shedding light on the extent to which these progressions can be considered complete.

2.4 - Inversions

At the end of this chapter on augmented sixth chords, the composer demonstrates alternate voicings and voice leadings of V_{b5}^7 , vii_{b3}^6 —the root position versions of the origin chords of Aug_3^4 and Aug_5^6 , each with lowered 2—and inversions of $Aug_{x4}^{\#6}$ and Aug_3^4 , chords he describes as rarely occurring. Inversions are identified entirely by whether the dissonant interval

⁹ These components of the *Guide* are discussed at the end of this Chapter, but both put forth that any of the rules in the treatise can be broken for the sake of strong melodic tendencies and correct voice leading (§14, §138).

is voiced as an augmented sixth or a diminished third/tenth, regardless of how the other voices are positioned. This contrasts with some modern theories of inverted augmented sixths, which name inversions based on which chord factor appears in the bass (for example, Aldwell, Schacter, & Cadwallader 2011: 578-9). In his discussion, Tchaikovsky considers V_{h5}^{7} and vii^o⁷_{h3} independently from the augmented sixth chords to which they are related by pitch class content. However, all inverted augmented sixths and inverted chromatically altered origin chords still resolve to tonic. Given that Tchaikovsky's labelling system relies on figured bass, it follows that the identity of an augmented sixth chord is contingent on the presence of an augmented sixth interval above the bass. It would be logical to assume, then, that inverting the interval or voicing it within inner voices rather than between the bass and one of the other three might disqualify the chord from being classified as an augmented sixth. However, Tchaikovsky's prose clearly states that it is possible to invert augmented sixth chords (i.e., $\operatorname{Aug}_{x4}^{\#6}$ and $\operatorname{Aug}_{3}^{4}$), so long as the resultant diminished third is voiced as a tenth (§106), likely because voicing it as a diminished third would create parallel fifths. An inverted $\operatorname{Aug}_{x4}^{\#6}$ is illustrated in measure 7 of Example 294 (Figure 2.7). Even though the inversion process removes the augmented sixth above the bass, it does not appear to alter the identity of the Augx4 (i.e., it is still referred to as an inverted 3^3 augmented sixth chord, not as a chromatically altered inversion of ii_3^4 (§106)), likely because it resolves as expected to tonic $\frac{6}{4}$. However, the chords treated earlier in this example illustrate "the dominant-seventh chord, [and] the chord of the diminished seventh...in still other forms...with [the] lowered second [scale] degree" (§106), instead of as inversions of augmented sixth chords.

Comparing the last measure of Figure 2.7 with the preceding ones, it becomes clear that differences in labeling are likely primarily motivated by voice leading,¹⁰ with particular focus on bass motion and the inversion of the resolving tonic.



Figure 2.7: Tchaikovsky's example 294 (§106). Suggested voicings of altered dominant chords, leading tone diminished seventh chords, and inverted augmented sixth chords

In measures 2-7 of this example, the typical stepwise voice leading of Aug_5^6 and Aug_3^4 is inverted. In mm. 5-7, the interval succession of augmented sixth expanding to octave becomes diminished tenth converging on an octave. In mm. 2-4 and m. 6, this results in resolution to first and second inversion tonic chords, which deviates from Tchaikovsky's prescription that augmented sixths should resolve to root position tonic. As such, these are not augmented sixth chords, but inversions of the chromatically altered origin chords. This categorization is strengthened by the adherence of the voice leading in mm. 1-6 to diatonic model resolutions of V^7 and vii⁰⁷ to I, I⁶, and I⁶₄.¹¹ The adherence to idiomatic dominant-chord voice leading is especially pronounced in m. 1 of Example 294, which features a descending fifth leap in the bass

¹⁰ The role of voice leading in defining chord identity has already been established: recall the passing versus actual chord distinction of the Aug_5^6 in Figure 2.3.

¹¹ For instance, the voice leading measure 2 follows the model $V_2^4 - I^6$ model resolution in Example 81 (§30: "Chord of the Second"). Further corresponding diatonic model voice leadings can be found in Example 99 (§38) and Example 98 (§37).

that contrasts greatly to the corresponding $Aug_3^4 - I$ model resolution. The model resolution of $V^7 - I$ is given in Example 77 (Figure 2.8), in which measure 1 illustrates the voice leading corresponding to measure 1 of Example 294.



Figure 2.8: Tchaikovsky Example 77 (§29). Model resolutions of V⁷ to an incomplete tonic chord with the third, fifth, and seventh in the soprano of the dominant seventh.

Thus, although the successions of the pitch-class sets in mm. 1-6 of Example 294 (Figure 2.7) are identical to earlier examples that resolve Aug_5^6 and Aug_3^4 to tonic, the distinct voice leading that is respectively idiomatic to the resolution of dominant, leading tone diminished seventh, and augmented sixth chords determines the identity of the chords in the progression.

However, it is unclear how to label m. 5 of Figure 2.7 (Example 294), which illustrates a progression with voice leading that is plausibly idiomatic to both $\operatorname{Aug}_5^6 - I$ (with the exception of the collapsing diminished 10th) and the diatonic resolution model of vii⁰⁷ to root position tonic. It behaves as an augmented sixth chord because it resolves as expected to root position tonic. The outer-voice placement of the diminished tenth interval also inverts the perfect fifth in the original Aug_5^6 (between Db and Ab) to a perfect fourth, which erases the issue of inevitable parallel fifths
in the resolution.¹² By the same token, m. 5 also corresponds directly with Tchaikovsky's model resolution of the diatonic version of this chord (vii⁰⁷ – I) in §37 (Figure 2.9). Given that this measure presents crucial voice leading characteristics of both the Aug⁶₅ and corresponding model diatonic behaviour, it is plausible that the identity of the chord could change depending on the contrapuntal context (i.e., how it is approached).



Figure 2.9: Measure 2 from Example 98 (§37) is the corresponding diatonic voicing and voice leading of the resolution in measure 5 of Example 294 (§106)

Notice that while three out of the four types of augmented sixth chords can be inverted, there is no mention of an inverted Aug⁶. This is because it is impossible to resolve an inverted Aug⁶ to root position tonic without creating parallel fifths and/or octaves. Therefore, any chords with the same pitch classes would be identified as inversions of the origin and resolve to either first or second inversion of the tonic triad. Overall, Tchaikovsky's discussion of inversions makes clear that resolution to the root position or second inversion tonic triad is integral to the identity of Tchaikovsky's augmented sixth chords. The question remains: what kinds (i.e., scopes) of tonics may resolve chords of the augmented sixth? Additionally, in what contexts may these tonics appear?

¹² Logically, if this chord was acting as an inverted Aug_5^6 and the D^b still appeared below the A^b when voiced a diminished tenth above the B, the same resolution techniques as those identified in Examples 286 (Figure 2.5) and 287 (Figure 2.6) would need to be employed to avoid parallel fifths.

2.5 – Modulations, Modulatory Digressions, Resolution to Major vs. Minor Tonics

2.5.1 – Modulations versus Modulatory Digressions

In all the musical examples discussed thus far, the tonics that resolve the augmented sixth chords are major. Curiously, Tchaikovsky does not provide examples of augmented sixth chords resolving to minor tonics. Although the opening lines of Chapter 27 do not specify the mode of the tonic triad into which augmented sixth chords resolve, §103 stipulates that the three principal types "…nearly always resolve into major triads, since their resolution into minor (which occurs at rare intervals) does not fully satisfy the musical ear" (§103). Note that he does not include the fourth type of augmented sixth chord (which he has not yet introduced) in this assertion. Aldwell, Schachter, and Cadwallader (2011) also note that when augmented sixth chords resolve directly to tonic, it is most frequently of major quality, although resolutions to minor tonic do occur (581).

One reason for this puzzling omission may have to do with the scope of the tonic chord into which the augmented sixths resolve. Notably, the only triad that is consistently of major quality across major and minor tonalities is the dominant. It is thus possible that the resolving major triads in question may be local, in addition to global tonics and thus may be dominant (or, by logical extension, any other major triad within the global key) on a larger scale. This flexibility is addressed by modern scholars as well. Notably, Harrison (1995) posits that the augmented sixth interval's "powers of tonal propulsion" (172) defined by its expanding semitonal resolution lends it similar key-defining abilities as other central dissonances in tonal music, specifically the tritone and diminished seventh (171-2). Harrison also notes that, like these other key dissonances, augmented sixth intervals can easily be integrated into the major and minor scales, built above and below the diatonic semitones (174). In a major scale, the scale

degrees that would form the resolving octave are $\hat{1}$ ($\hat{8}$), $\hat{3}$, $\hat{4}$, and $\hat{7}$, with $\hat{2}$, $\hat{3}$, $\hat{5}$, and $\hat{6}$ in minor. He also suggests that the augmented sixth interval may expand to any chord factor within the resolving harmony (root, third or fifth) (174). This hypothetically allows augmented sixth intervals (and by extension, chords) to resolve to any of the seven triads in the diatonic major scale, restricted only by illegal doublings (e.g., the third of the dominant triad and the root of the leading tone triad cannot be doubled). This contrasts with Tchaikovsky's recommendations, which restrict the augmented sixth intervals in the Aug⁶, Aug⁴ and Aug⁶ to resolving only to the root of the ensuing diatonic triad (\$99-\$101), while augmented sixth interval in the Aug^{#6} should expand to the fifth of its resolving chord (\$104). Considering Tchaikovsky's insistence on resolving to major triads, this would limit resolution of the three principal types of augmented sixth chords to I, IV, and V in major, III, V, and VI, in minor, and \flat VII (in non-dominantfunctioning contexts only) in either major or minor.

While Harrison's (1995) theory affords much more flexibility than the rules laid out in Tchaikovsky's *Guide*, there is significant intersection. Harrison's theory is entirely underpinned by focus on the voice leading of the augmented sixth interval's resolution (Harrison, 1995: 171-2, 184-5). As previously mentioned, voice leading is a central pillar of the musical examples in Tchaikovsky's treatise. Moreover, Harrison's theory freely allows resolution directly to the global tonic and other chords within the diatonic system. Combined with what augmented sixth chords' key-defining characteristics, this is highly suggestive of local tonic resolutions of augmented sixth chords. As will become apparent throughout the chapters of this thesis,

Tchaikovsky does not construct augmented sixth chords only on naturally occurring semitones.¹³ However, Harrison's work systematically corroborates the flexibility of augmented sixth chords' resolving triads, further supporting Tchaikovsky's deviation from the standard modern suggestion that augmented sixth chords should resolve only to dominant.

The notion of tonic scope is also addressed indirectly by the composer in his discussion of modulatory "degressions" [sic] (§103) (hereafter, "digressions"). Indeed, the modulatory digression is evidence that directly supports the possibility of spelling and resolving augmented sixth chords according to local tonics. Tchaikovsky conjectures that the reason for which some the chords are then required to resolve to the dominant triad, whose consistently major quality precludes the unsatisfying resolution of augmented sixth chords to minor triads. He observes that adopting that alternative perspective would then require all of his previous examples to be considered in relation to an F tonic instead of in C major, a notion that he describes as "decidedly fallacious" (§103). He goes on to say that "...a chord of the augmented sixth on the 6-th [scale] degree is nothing else than a modulatory degression into the key of the dominant: this degression is indeed so unnoticeable, that without the help of a prolonged cadence we scarcely get the impression of a modulation" (§103). It becomes clear from this quotation that the alleged fallacy is not the construction of augmented sixth chords on $\hat{b}\hat{b}$ but is instead the lack of flexibility of the scope of the resolving tonic. The modulatory digression is thus a brief dip into the local tonic of G major, causing the dominant to briefly become the tonic. The ability to shift between local

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¹³ This is especially true of the Augx4, which would be limited to IV in major and V and VI in minor if they were to $\frac{3}{3}$ be constructed only on naturally occurring semitones. Note that Harrison (1995) does not limit augmented sixth

be constructed only on naturally occurring semitones. Note that Harrison (1995) does not limit augmented sixth construction in this way either and identifies many examples built on other (often chromatic) scale degrees (177, 182, 184-6, 188). This means of construction is intended only to emphasize the ease with which they can be incorporated into diatonic systems (174-6).

tonics, which suggests the more modern concept of tonicization (and is represented as such in Figure 2.10), is distinguished from a full modulation in Example 290 (Figure 2.10).



Figure 2.10: Tchaikovsky Example 290 (§103). A modulatory digression to G major (mm. 1-3) vs. a true modulation to G major (mm. 4-6) with annotations.

The feature that distinguishes the modulatory digression and full modulation in Figure 2.10 is the goal of each prolonged cadence. Both progressions begin identically, but the first three measures cadence in C while the final three measures cadence in G. The G major chord on the downbeat of mm. 2 and 5 can be described in modern terms as a tonicized dominant that has the potential to begin a more complete modulation. The tonicization process is carried out by the resolution of the Aug_3^4 (built in G major) on the fourth beat of measures 1 and 4 to this new tonic. That the new key of G major is continued and subsequently confirmed by the prolonged cadence in mm. 4-6 shows that the music has already shifted tonics in m. 2.1 and 5.1, albeit in the case of the former briefly and unconvincingly without a prolonged cadence. Thus, a "modulatory degression" is a brief, unconfirmed modulation to a (new) local tonic without a prolonged cadence. This implies that in minor keys, the three principal types of augmented sixths

should be resolved exclusively to major local tonics, such as triads VI, V, and III, rather than global ones.

2.5.2 – Modulating with Augmented Sixth Chords

Since the three principal types of augmented sixth chords have their origins in V or vii, Tchaikovsky shows that they can be used to modulate, as long as "these chords are most carefully prepared and then only, [sic] if the key to be reached is not too distant" (§102). Although his prose provides no further qualification of the "not too distant" keys, the corresponding musical Example 289 (§102) suggests that such key destinations could include the major supertonic, subdominant, dominant, or major mediant.



(relative to C major)

Figure 2.11: Tchaikovsky's Example 289 (§102). Modulating with the three principal types augmented sixth chords, with annotations

Curiously, in contrast with Example 290 (§103) discussed above, none of these modulating progressions include a prolonged cadence or dominant chord in either key. Example 289 demonstrates the following procedure instead. First, the augmented sixth chord is prepared by the original tonic in root position (as in mm. 1-3), possibly in combination with vi⁶ (m. 4). Then, like the modulatory digression, the augmented sixth chord of the new tonic is spelled in the new key. Finally, the augmented sixth chord is correctly resolved to the new tonic. Measure 1 of

Example 289 modulates with an Aug⁶, measure 2 with an Aug⁴₃, and the third and fourth measures use the $Aug_5^6 - Aug_3^4 - I$ resolution technique outlined in Example 286 (§101). Given the lack of cadences in these progressions, it is possible that by "modulation" Tchaikovsky is referring to a local tonicization process akin to the modulatory digression procedure outlined above. However, since these examples lack further musical context, it is also possible that they mark the beginning of full modulations whose subsequent prolonged cadences have been omitted.

Tchaikovsky also treats enharmonic equivalency as a means of modulation. He calls attention to the aural equivalence of the Aug_5^6 and the dominant seventh chord of the key that is a tritone below (§105). This therefore associates the Aug_5^6 of a key (e.g., C major) with the dominant seventh chord rooted on its Neapolitan note (e.g., D^{b7}). In modern terms, this D^b chord can also be the result of a tritone substitution.¹⁴ The composer highlights another enharmonic equivalence between Aug_5^6 and $\operatorname{Aug}_{x4}^{#6}$, where the tonic of the $\operatorname{Aug}_{x4}^{#6}$ is the dominant of the tonic of the Aug_5^6 . This relationship and both types of enharmonic equivalence are demonstrated in the modulatory progression in Example 293 (§105, Figure 2.12) that moves from C major to B major.

¹⁴ Nicole Biamonte (2008) systematically explores the enharmonic relationship between augmented sixth chords and tritone substitutions in both jazz and Western art music contexts, providing an overview of their overlapping and diverging features across contrasting repertoires. Through a comparative methodology, she finds similarities in the "structural features" of enharmonically equivalent augmented sixth chords and tritone substitutions, and differences in their voice leading, form-functional, and normative harmonic-functional behaviours (¶21).



Figure 2.12: Example 293 (§105) with Roman numeral annotations. Modulation from C major to B major using enharmonic equivalence. *This tonic 6/4 – root position V is notated according to Tchaikovsky's figured bass notation system to describe prolonged cadences (§49). In modern terms, it refers to a cadential six-four.

There are two enharmonically equivalent augmented sixth chords in this progression. The first acts as a pivot between the two keys, utilizing the enharmonic relationship between the Aug⁶₅ of B major and the dominant seventh of C major. Pedagogically, this aural equivalence is indicated by the initial G⁷ chord, which is separated from the rest of the progression with a double bar line. Playing this example on the piano would draw the attention of the student to the G⁷ (Aug⁶₅) sonority both as it relates to C major and F#, emphasizing its recontextualization in m. 2. This pivot leads into a brief tonicization of F# major through the Aug⁶₅ – $\frac{4}{3}$ – I (F#) resolution strategy. F# major then changes to B major, which will eventually become the goal tonic. However, the Aug⁴⁶₃ of B on the final beat of m. 2 continues to destabilize the key of the progression by $\frac{#6}{3}$ increasing the tension between B major and its dominant, since Aug_{x4} of B major is the

enharmonic equivalent of Aug_5^6 of F# major. The final two measures comprise a prolonged cadence of the first class, confirming B major as the new key. Note that although there is no

diatonic subdominant-category chord prior to the I_4^6 , Tchaikovsky conceives of the Augx4 as $\frac{4}{3}$ belonging to the subdominant key (§105), and its diatonic origin is ii $\frac{4}{3}$. So, the subdominant sonority is implied by the Augx4, which completes the prolonged cadence progression. This $\frac{4}{3}$ progression exemplifies both modulatory digression and complete modulation, enacted through rich tensions created by enharmonic equivalencies. These enharmonic reinterpretations allow for smooth connections between very distant keys. Moreover, this example demonstrates how augmented sixth chords (especially Augx4 in this case) can participate in prolonged cadences, $\frac{4}{3}$ and the next chapter will explore the implications of this example for the analysis of Tchaikovsky's music.

2.5.3 – Resolving to Minor Tonic

While the modulatory digression concept provides a theoretical justification for the rule that augmented sixth chords should always resolve to major triads, it does not account for why resolving to minor triads "...does not fully satisfy the musical ear" (§103). Given the practical nature of this manual,¹⁵ Tchaikovsky does not elaborate on why resolutions to minor triads are less satisfying. Moreover, it is unclear how resolutions of Aug_{x4} interact with this principle: $\frac{46}{3}$ since this fourth type of augmented sixth chord is introduced after the discussion of modulatory digressions—which are not mentioned outside of section 103—we are left with the question of

¹⁵ Tchaikovsky clarifies the nature of the treatise in a footnote that reads: "Having a purely practical aim in this work, we shall avoid minute explanations and justifications of different rules. It were well for the pupil to search out instinctively, as it were, the justification for several rules. A true musical instinct will at once convince him that all these rules originated in the demands of his own ear" (footnote to §11).

whether resolving Aug_{x4} to a minor triad is equally as unsatisfying as doing so with the other $\frac{1}{3}$ three types of augmented sixth chord.

To address these questions, it is useful to recall and unpack Tchaikovsky's emphasis on smooth and correct voice leading, which both saturates the rules in this manual and justifies intentional deviations from them. In the early chapters of the treatise (§14), he establishes that smooth connections between chords are achieved by maximizing common tones and minimizing the size of melodic intervals between adjacent chords (although the bass and soprano voices are less restricted by this), while also avoiding illegal parallel and direct fifths and octaves, dissonant leaps, and cross relations.¹⁶ In other words, smooth voice leading entails correctly moving each voice very small distances, with some motivic/melodic exceptions that are idiomatic to the bass and soprano voices.

Many of these characteristics are echoed in Straus' (2003) definition of smooth voice leading in atonal music. Straus defines voice leading smoothness as a quantifiable characteristic, which "...is measured by the *total displacement,* the sum of the intervals traversed by each note from its origin in [pitch class set] X to its destination in [pitch class set] Y" (Straus, 2003: 321-22, emphasis original). He goes on to say that "given two voice leadings, the one that has the lower total displacement is the smoother" (Ibid.). Although Straus' work focuses on a different repertoire that is not constrained by the same illegal interval progressions as is Tchaikovsky's music, his system provides us with a means of evaluating and characterizing the total voice leading displacement—or smoothness—between two pitch class sets. This can be readily applied to resolutions of augmented sixth chords.

¹⁶ These rules are laid out especially clearly in §11, §13, §14, §40, §41, §46, and §60.

Figure 2.13 displays resolutions of Aug⁶, Aug⁴₃, Aug⁶₅, and Aug⁴_{x4} chords to a C major $\frac{46}{3}$

tonic (established in Figure 2.1 to Figure 2.6). As each pitch class within the chord has a specific tendency for resolution, only one model progression for each type has been included (with the exception of the Aug_5^6 , for which both strategies for avoiding parallel fifths have been illustrated).¹⁷



Figure 2.13: Model resolutions of each type of augmented sixth chord to C major tonic Assuming that the voice leadings in Figure 2.13 capture the smoothest possible connections between the chords (i.e., the augmented sixth expands by semitones to an octave and the other two pitch classes keep a common tone or move by step), Figure 2.14 recreates these progressions but resolves each augmented sixth chord to C minor instead of C major. This generates hypothetical model progressions for resolving augmented sixth chords to a minor tonic.

¹⁷ Note that the temporal displacement of voices in the resolution does not change the overall voice leading displacement, as it simply introduces more common tone motion, which adds 0 to the total displacement. Both of these model resolutions are included in Figure 2.13 to show that they are equally smooth.



Figure 2.14: Hypothetical model resolutions of each type of augmented sixth chord to C minor tonic From these figures, the total voice leading displacement can be calculated and compared. For example, the comparison of voice leading displacement for the Aug⁶ in Figures 2.13 and 2.14 would be evaluated as follows (ST = semitone):

Aug ⁶ Resolving to C major:	Aug ⁶ Resolving to C minor:		
$F \rightarrow E = 1 ST$	$F \rightarrow Eb = 2 ST$		
$B \rightarrow C = 1 ST$	$B \rightarrow C = 1 ST$		
$F \rightarrow G = 2 ST$	$F \rightarrow G = 2 ST$		
$Db \rightarrow C = 1 ST$	$Db \rightarrow C = 1 ST$		

Total semitonal displacement = 5 Total semitonal displacement = 6

Since the total displacement value is lower for resolution of the Aug⁶ into the major triad, it is the smoother progression. This process is applied systematically to the model progressions for the other three types of augmented sixth chords, the results of which are summarized in Table 2.2. Note that both Aug_5^6 model resolutions are equally smooth.

Table 2.2: Total voice leading displacement in semitones (ST) for the remaining types of augmented sixth chord, resolving to C major vs. C minor

Type of	Resolution to C major		Resolution to C minor	
Augmented	Number of voices	Total ST	Number of voices	Total ST
Sixth chord	with 1, 2, or 0 ST	displacement	with 1, 2, or 0 ST	displacement
	displacement	_	displacement	_
Aug ⁴	1 ST: 3	3	1 ST: 2	4
3	2 ST: 0		2 ST: 1	
	0 ST: 1		0 ST: 1	
Aug ⁶	1 ST: 4	4	1 ST: 3	5
5	2 ST: 0		2 ST: 1	
	0 ST: 0		0 ST: 0	
#6	1 ST: 3	3	1 ST: 2	2
Augx4	2 ST: 0		2 ST: 0	
3	0 ST: 1		0 ST: 2	

In comparing columns 3 and 5 of Table 2.2, a clear pattern emerges. The major tonic resolution of the three principal types of augmented sixth chord has consistently smoother voice leading than the minor resolution. This is unsurprising, as the only difference in the C minor chord from the C major one is the E_{\flat} , so the F \natural in each of the three principal types is consistently falling by two semitones instead of one. While there are too many other confounding musical variables (e.g., motivic structure, melodic demands, avoiding illegal interval progressions, etc.) for a causal relationship to be established, there is clearly a positive correlation between smoother voice leading and Tchaikovsky's preference for resolution to major triads.

Most interestingly, the pattern is reversed for the Aug_{x4}: the total semitonal displacement $_{3}^{\#6}$ is lower when resolving to C minor than to C major, on account of the enharmonic common tone of D#/Eb. Given that Tchaikovsky does not comment on how preference for major resolutions affects the Aug_{x4}, it is only possible to make a conjecture about the nature of this result. Following the logic of the correlation outlined above, perhaps Tchaikovsky would have $\frac{#6}{3}$ considered the resolution of the Augx4 into a minor triad less unsatisfactory than for the other

#6 three types of augmented sixth chords. However, each of his model resolutions of the Augx4 3 involve major triads (refer to Figure 2.4).

The resolution of augmented sixth chords to minor tonic $\frac{6}{4}$ is observed in Tchaikovsky's music by scholars such as Henry Zajaczkowski (1987) and Robert Gauldin (2004). They explain it with reference to the *omnibus*, a progression identified by many theorists¹⁸ in Tchaikovsky's music, along with other Romantic- and Classical-era composers. Yellin (1998) and Telesco (1998, 2001) both show that this was a well-known progression in the 19th Century and that it is used and discussed in various pedagogical contexts throughout the 17th – 19th Centuries. They argue that the 17th – 18th Century uses and discussions of this progression undoubtedly influence Romantic-era composition (Yellin, 1998: 7-8, 19; Telesco, 1998: 274-279). Given the progression's influence on and pervasiveness in musical practice and discourse the 19th Century, it is likely that Tchaikovsky was at least aware of it.

Like the brief progressions in Example 291, the augmented sixth chord and its resolution result from the specific voice leading process that generates the omnibus: two inner-voice pedal tones and chromatically diverging outer voices (Zajaczkowski, 1987: 65). Zajaczkowski's discussion of this progression focuses on a basic five-chord model, reproduced below (Figure 2.15). He claims that it usually functions as a developmental, momentum-generating, and linking tool, also providing a brief analysis of the progression's symmetry. He notes that the entire progression results in chromatic voice exchange, making use of only three different pitch class

¹⁸ See especially: Gauldin (2004), Zajaczkowski (1987), Yellin (1998), and Telesco (1998, 2001).

sets that are arranged as a palindrome. The <augmented sixth $-i_4^6$ > progression occupies the second and third positions in the series (Ibid.).



Figure 2.15: The five-chord Omnibus progression, based on Zajaczkowski's (1987: 65) Example 21. Blue-coloured pitches show the double pedal tones, while the outer voices diverge in stepwise chromatic motion.

Although Zajaczkowski identifies this second chord as both a German augmented sixth and equivalent to the penultimate A¹ dominant-seventh chord, this description does not align with Tchaikovsky's labelling system and omits important paradigmatic details specific to Tchaikovsky's theory. Since the spelling and voice leading of the augmented sixth chord resolutions in both Figure 2.4 and Figure 2.15 are almost identical, it would be more appropriate to identify this omnibus chord as an enharmonically spelled Augx⁴ of a C tonic. The main 3 discrepancies between the omnibus and Tchaikovsky's pedagogical model are the enharmonic spelling of D#/E¹ and the qualities of the resolving tonic $\frac{6}{4}$ s: major in the pedagogical model (Figure 2.4) and minor in the omnibus (Figure 2.15). These discrepancies are both justified by the motivic voice leading pattern that generates the omnibus progression. E¹ is one of the innervoice pedal tones idiomatic to the progression; changing it to an E¹ in the C⁶ triad would disrupt the voice leading process and undercut the progression's identity. Similarly, the E¹ spelling of pitch class 3 in the Augx⁴ maintains motivic consistency across all instances of the double pedal tone. These discrepancies thus do not undermine the Aug_{x4} identity of the second chord in 3

Figure 2.15.

Although this omnibus model sets an important analytical precedent for resolving this type of augmented sixth chord to a minor tonic $\frac{6}{4}$, it does not support the notion that $\operatorname{Aug}_{x4}^{\#6} - I_4^6$ (or i_4^6) could conclude a progression, which I first proposed on pp. 16-7. However, Gauldin (2004) considers the resolution of $\operatorname{Aug}_{x4}^{\#6}$ to major and minor tonic $\frac{6}{4}$ in other contexts, with specific focus on voice leading. He describes the same voice leading process identified in Figure 2.15 as a chromatic wedge progression, which produce a series of even or odd ordered pitch class intervals (measured in semitones) between the pitches of the diverging chromatic lines. Of particular relevance to the discussion of Figure 2.4 and Figure 2.15 is the Even-Interval Model (Gauldin, 2004: 2-3). Since augmented sixth intervals require diverging chromatic resolution, the chords lend themselves naturally to chromatic wedge progressions and they appear in most of Gauldin's models.

While the basic Even-Interval Model chromatic diverging wedge progression includes voice exchange over a full octave, the most pertinent of Gauldin's examples to our investigation are the smaller wedge segments, which are reproduced in Figure 2.16a and 2.16b, below. Each row of pitch-class letters corresponds to the soprano, alto, tenor, and bass voices respectively from top to bottom. The ordered pitch-class interval values between the chromatically divergent voices are listed along the top, and the figured bass for each resultant chord is listed in the bottom row. Note that when interpreted in the context of Tchaikovsky's theoretical framework, the chords labelled as a German augmented sixth (denoted by G6 in the bottom row) are the

same enharmonically spelled Aug_{x4} resolving to minor tonic $\frac{6}{4}$ as those found in Zajaczkowski's $\frac{3}{4}$

five-chord omnibus model.

b)

a)



Figure 2.16: (a) The four-note even-interval chromatic wedge and (b) the three-note even-

interval chromatic wedge progression, both in F minor (excerpts reproduced from Gauldin, 2004:

4, Figures 2d and 2e, respectively)

Notably, the five-chord omnibus highlighted by Zajaczkowski is also one of Gauldin's segments, with the given interval series <8, 10, 0, 2, 4> (Gauldin, 2004: 3, Example 2c). Importantly, the four-note wedge (Figure 2.16a) ends with the now familiar enharmonic $\operatorname{Aug}_{x4}^{\#6} - i_4^6$, confirming the suggestion that this harmonic series may contribute concluding function to a motivic or contrapuntal process. Considered in the context of Tchaikovsky's theory, the three-note wedge progression (Figure 2.16b) also features the enharmonic $\operatorname{Aug}_{x4}^{\#6} - i_4^6$ resolution as a focal point. The progression capitalizes on enharmonic equivalencies, resulting in chromatic voice exchange

^{#6} between the Augx4 and an enharmonically spelled inversion of its chromatically altered origin 3

#6 (ii 5). b3

Gauldin demonstrates that these segments can be found independently or stitched together sequentially to generate elongated chromatic wedge progressions with recursive voice leading structures (Ibid.: 2, 4, 19). Moreover, he demonstrates that the <10, 0, 2> segment and its retrograde <2, 0, 10> can be found very frequently as the basis of many extended wedge progressions in Tchaikovsky's orchestral works, which often generate momentum towards climactic moments (Gauldin, 2004: 10-11). This suggests that $\operatorname{Aug}_{x4}^{\#6} - i_4^6$ is a common progression in Tchaikovsky's music, despite its omission from the composer's theoretical manual. Gauldin's observation that smaller segments may appear independently also suggests that the Aug_{x4} - i_4^6 progression can plausibly conclude a musical unit and/or process without the tonic $\frac{6}{4}$ necessarily needing to progress to a root position dominant chord. This is further supported by applying Gauldin's theory to Tchaikovsky's Example 291: the normative <8, 10, 0> even-interval wedge series is built into the $ii_3^4 - Aug_3^{\#6} - I_4^6$ progression illustrated in Example 291 (§104).

Therefore, intersections between Tchaikovsky's theoretical framework and Straus (2003), Zajaczkowski (1987), and Gauldin (2004) reveal two additional paradigms for the behavior of augmented sixth chords. First, the Aug_{x4} can resolve to a minor tonic $\frac{6}{4}$ triad. Additionally, depending on its motivic and form functional contributions and context, Aug_{x4} – tonic $\frac{6}{4}$ (regardless of quality) does not necessarily require a following prolonged cadence of the first class in order for the progression to be considered complete.

2.6 – Interactions with Modern Concepts of Harmony, Harmonic Function, and Counterpoint

It is useful to take a broad perspective on Tchaikovsky's discussions of augmented sixth chords. Throughout his treatise, he strongly recommends the prioritization of smooth and correct voice leading in composition. The voice leading rules for connecting triads that Tchaikovsky lays out in the *Guide* are so essential that the composer expects the student to rely on them to generate each successive chord in a pleasing and correct progression. He states that "...the progression and position, therefore, of the upper voices [of the next chord/triad] is influenced by the common tones" (§11) and that voice leading determines chord doubling (§10, §24). Further support for the high status of voice leading is found in Chapter 4 of the *Guide*. Even at this early stage in the book, Tchaikovsky suggests that students should become comfortable occasionally breaking the rules set forth in the first three chapters "...provided we thereby improve the voice leading" (§14). For example, he proposes that connecting two triads by common tone should be practiced so long as doing so "...does not hinder us in our true purpose: a free and independent leading of the voices" (ibid).

Another high compositional priority that comes through in the *Guide* is motivic voice leading and the melodic dimension. In the penultimate chapter of the treatise, Tchaikovsky clearly states that although it is important to make smooth (and correct) connections between chords, these "laws of harmony" (§138) are intended to steer the student away from committing voice leading errors and that an experienced composer may intentionally deviate them when prioritizing other musical factors (§149). For instance, the composer states that "…in a highly

developed harmonization the melodic tendencies of the voices are so powerful, that even the boldest deviations from these laws are sometimes justified by them. The preponderance of the melodic dimension and the influence it exerts on chord-progression is best exhibited in the resolution of irregular harmonies" (§138). This opens the possibility that the pedagogical norms outlined by the composer can be justifiably broken and logically extended on the grounds of motivic voice leading, especially during the resolution of dissonant chords that potentially include augmented sixths. It emphasizes that contrapuntal and motivic structure are inextricably intertwined. This emphasis on motivic voice leading will remain evident throughout the thesis and significantly informs the analysis presented in Chapters 3 and 4 of this paper.

These fundamental elements have significant implications for how the broader concepts and terms of "harmony," "function," and "counterpoint" may be understood in the context of his pedagogical framework and ultimately his music. Ellis (2016) asserts that Tchaikovsky must have regarded augmented sixth chords (the three principal types only) as having dominant harmonic function, by implication of their direct tonic resolution and dominant-category origin chords (Ellis, 2016: 208). However, the *Guide* makes no mention of harmonic-functional progressions in the modern sense. While Tchaikovsky does conceive of types of chords in categories (i.e., tonic, dominant (referring only to V and V⁷), and sub-dominant groups, with vii^o and vii^{o7} grouped separately), he only discusses their categorical succession in the context of prolonged cadences (§49). Moreover, he never suggests that certain chords have characteristics inherent to each category, instead focusing on how chords can be connected within a progression and their consonance and dissonance. This is especially clear from his discussion of the leading tone triad and seventh chord, which he describes entirely from the perspective of how they may be connected to other diatonic chords. He goes so far as to say that seventh (and ninth) chords

"...are not independent harmonies, but find their support and justification in the chord that follows them" (introductory text to the Second Section).

Given that Tchaikovsky's compositional rules are clearly highly contrapuntally motivated, imposing the anachronistic concept and terminology of modern harmonic function in the way that Ellis (2016: 208) does above would be ineffective in analysis.¹⁹ Ellis' attempt to categorize how Tchaikovsky's augmented sixth chords function harmonically based on the modern harmonic function of their origins does not account for Tchaikovsky's conception of the diatonic origin chords and so does not provide a nuanced picture of how these chords may behave in context. This significantly reduces the emphasis placed on contrapuntal structure and motivic voice leading, which we have just shown to be central to Tchaikovsky's compositional approach. His suggestion that these chords have dominant harmonic function based on their resolution to tonic is similarly tenuous. It does not account for the scope of the tonic into which the chord resolves and omits the nuance that by both Tchaikovsky's and modern standards, dominant and dominant-functioning chords are not the only harmonies that progress to tonic. Moreover, it relies on a logic of harmonic succession that is based on stringing together harmonic categories instead of actively generating each sonority in a series through a correct and smooth contrapuntal and/or melodic process. Instead, familiar chord successions (including those that fit well into modern harmonic function theory) arise naturally as a result of the voice leading rules explained throughout the treatise and attention to balance between consonance and dissonance. In short, to call Tchaikovsky's augmented sixth chords dominant functioning is too narrow in scope and not representative of their contrapuntal features, behaviours, and contributions.

¹⁹ Although, as David Kopp (1995) points out, the notion of harmonic function itself is quite general in scope and rather ambiguous in definition (\P 1).

It is thus implied that the "harmony" referred to by the title of this treatise is the smooth connection of appropriate musical simultaneities (triads and extended chords)-their appropriateness determined by their associated melody and their potential for smooth voice leading-blurring the lines between harmony and counterpoint. Just as well-executed voice leading processes give rise to pleasing harmonic progressions, the construction and voice leading of chords in succession should be chosen to create smooth voice leading. This, again, points to a prioritization of voice leading in the process of harmonization. David Kopp (1995) identifies a similarly contrapuntal motivation in Rameau's harmonic theory: both Rameau and Tchaikovsky have tonic, subdominant, and dominant categories of chords, but how they are linked together in a progression determined entirely contrapuntally (¶3). Moreover, their contrapuntal behaviour is identifying: the harmonies are indeed the sum of their constituent parts, but mostly they are what they do. This allows us to distinguish between inverted augmented sixth chords and inverted chromatically altered origin chords (recall discussion related to Figure 2.7), as well as enharmonically equivalent $\operatorname{Aug}_{5}^{6}$ and $\operatorname{Aug}_{4}^{20}$ These harmonies are constructed of contrapuntal tendencies and potentials (i.e., consonance and dissonance that is either flexible or demands a specific type of resolution) (¶3) that undoubtedly encourage smooth yet independent voice leading.

Tchaikovsky recognizes the enharmonic equivalence of the Aug_5^6 and the Aug_4^4 (to which Ellis refers as the chord notated with sharps), but conceptualizes them as completely independent chords, based on their voice leading behaviours (i.e., the chord factors to which they resolve). Moreover, recall earlier discussion that suggests resolution #6 of the Augx4 to the tonic $\frac{6}{4}$ can constitute a complete progression, without any need to continue into Tchaikovsky's 3 any independent of the augment of the first sharp)

equivalent of the cadential $\frac{6}{4}$ (a prolonged cadence of the first class).

²⁰ Ellis (2016) regards these two chords as equivalent (functionally and otherwise), stating that the occasional enharmonic spelling is likely a notational issue. He states that "[Tchaikovsky] also prefers to notate the type of German sixth that resolves on a cadential $\frac{6}{4}$ with sharps for greater clarity of the voice-leading" (208). Recall that

The function(s) of augmented sixth chords in Tchaikovsky's orchestral music are thus a central focus in this investigation. However, this study is not concerned with harmonic function in the categorial ways of Ellis (201: 208) or Riemann, who identifies functional meaning by the makeup of individual chords instead of how they relate to one another (Kopp, 1995: ¶10–¶12). Instead, the function of Tchaikovsky's augmented sixth chords will depend on how they contribute to their immediate context (i.e., motivically, contrapuntally (including voice leading), formal functionally, metrically, at what level of structure, etc.) and how they relate to other nearby augmented sixth chords.

2.7 – Conclusions, Summary, and Motivations for Chapters 3 and 4

Throughout this first chapter, we have unpacked Tchaikovsky's conception of augmented sixth chords by examining his compositional pedagogy, as well as intersections and conflicts between the *Guide* and modern theoretical approaches to augmented sixth chords. This investigation has shown that the composer theorizes four types of augmented sixth chords, whose labels arise from figured bass. The three principal types (the Aug⁶, Aug⁴₃, and Aug⁶₅) all resolve to root position tonic in specific ways. With each, the dissonant interval expands to an octave comprising the root of their resolving chord. The fourth type (the Aug^{x4}) is enharmonically $\frac{\#6}{3}$

equivalent to the Aug_5^6 , but an entirely separate chord. It resolves to second inversion tonic triad and the dissonant interval expands to an octave that comprises the fifth of its resolving harmony. The tonics into which augmented sixth chords resolve can be local or global. This is evidenced by Tchaikovsky's distinction between a modulatory digression and full modulation. The modulatory digression is reminiscent of the modern tonicization, whereas the true modulation requires a prolonged cadence of the first or second class in order to be achieved. On the topic of modulations, this chapter has also shown that augmented sixth chords can be used to modulate in multiple ways. For instance, it can partake in a modulatory digression that outlines the new tonic. Additionally, the Aug_5^6 and $\operatorname{Aug}_{x4}^{\#6}$ can act as enharmonic pivots in a semitonal modulation, as they are enharmonically equivalent to the dominant seventh chord of the key whose tonic is a tritone below ($\triangleright II^7$ of the home key). This kind of enharmonic semitonal modulation consistently involves enharmonic reinterpretation. Again, the voice leading identifies the chord as either an augmented sixth chord or a dominant seventh.

Along the same vein, Tchaikovsky's augmented sixth chords can also be inverted such that their characteristic dissonant interval is a diminished tenth instead of an augmented sixth. However, they must proceed as expected to root position tonic (or tonic $\frac{6}{4}$ if the chord in question is an inverted Augx4). If an inverted augmented sixth chord does not follow the prescribed $\frac{46}{3}$ resolution of its usually voiced counterpart, then it is to be considered an inverted version of the chord's corresponding chromatically altered origin chord instead.

Finally, this chapter has shown that Tchaikovsky's theory can be logically extended with the help of some other modern theories that similarly emphasize the motivic and contrapuntal musical dimensions. For instance, we use Straus' voice leading smoothness measure to evaluate the peculiar preference of Tchaikovsky's for augmented sixth chords to resolve consistently to major triads, as well as the supposed unsatisfactory aural quality of a minor tonic resolution. Additionally, Gauldin and Zajaczkowski are scholars who have discussed some of Tchaikovsky's compositional techniques at length. Gauldin's (2004) theory of chromatic wedge progressions highlights the use of augmented sixth chords in a common compositional technique of Tchaikovsky's. Zajaczkowski (1987) is helpful in identifying the omnibus as a frequently employed developmental progression in Tchaikovsky's music. Gauldin's and Zajaczkowski's work overlaps to a considerable degree in that they identify similar motivic processes and their usual form functional significance, which will be central to the analyses in Chapters 3 and 4 of this study.

These new insights provide significant fodder for further inquiry, which the following two chapters address. The first task is to demonstrate how the compositional pedagogy laid out in this *Guide* can be readily applied as tools for music analysis. This will be achieved by investigating how these guidelines can apply to real musical situations: How well do Tchaikovsky's compositional practices reflect his pedagogical recommendations? Considering the issue of (non-harmonic) function, another primary task is to investigate how Tchaikovsky's augmented sixth chords contribute to and integrate with their immediate musical contexts. This implicates elements of motivic and contrapuntal structure, formal function, phrase structure, metric structure, orchestration, etc., potentially across all levels of structure. Beyond searching for instances of alignment with the principles that Tchaikovsky has put forth, Chapters 3 and 4 also aim to investigate how the composer is able to work flexibly with and bend his own rules. To what extent does Tchaikovsky deviate from the recommendations outlined above? What is the underlying logic of such deviations? To what extent do they reflect the motivic and/or contrapuntal structure of the music? Finally, another central curiosity of this study is how augmented sixth chords may contextualize and define one another in a unified musical context and investigate the range of possible levels of structure at which augmented sixth chords may operate. Chapter 4 investigates this question by examining the uses of augmented sixth chords within the first movement of Tchaikovsky's Sixth Symphony.

Chapter 3: Applying Tchaikovsky's Principles in Analysis

3.1 – Introduction and Methodology

This chapter applies Tchaikovsky's theory to the analysis of brief excerpts from several of his orchestral works. Since the pedagogical musical examples in his manual do not comprise excerpts of fully developed compositions, it is only possible to generalize about how the composer thinks the chord should be used. While it seems likely that Tchaikovsky would follow his own pedagogy, it is impossible to make any conclusions about his conceptions of the chord from the manual alone. In this section, I focus on published analyses of augmented sixth chords in Tchaikovsky's orchestral music that use modern theoretical approaches in their explanations. I then reinterpret the examples using Tchaikovsky's guidelines, with the goal of demonstrating how his own theory can be used as an analytical framework. This is beneficial because it considers the implications of the original purpose of the manual. Tchaikovsky's book is a collection of practical rules and recommendations to be applied in compositional contexts, not a series of analytical observations that have been abstracted into a theoretical framework. A key part of my methodology is thus recontextualizing the recommendations for analytical application. My discussion in this chapter establishes the efficacy of this recontextualization, as reinterpreting published analyses demonstrates how applying Tchaikovsky's principles can provide additional interpretive insight into a diverse sample of augmented sixth chords across a variety of his works. Finally, this chapter informs my close analysis of augmented sixth chords in the first movement of Tchaikovsky's Symphony 6 (see Chapter 4), as the results are suggestive of the chords' various possible musical contexts and realizations.

The publications referenced in this chapter range from undergraduate theory textbooks to monographs and journal articles. In the following discussion, I present reinterpretations of eleven

examples of augmented sixth chords in Tchaikovsky's orchestral music identified by seven scholars. Importantly, the purpose of this chapter is *not* to systematically investigate nor theorize the differences between modern analytical approaches to augmented sixth chords and Tchaikovsky's recommendations. Although it would be an interesting exercise, such an endeavour is outside the scope of the research question, which focuses primarily on comparing Tchaikovsky's pedagogy to his compositional practice.

3.2 – Reinterpreting Modern Analyses with Tchaikovsky's Theory

Aldwell, Schachter, and Cadwallader consider this resolution directly to the D major tonic of the passage to be unusual, stating that in a progression such as this, "…most other composers would have used a root-position V" (ibid.). However, this is a perfectly normal progression by Tchaikovsky's standards. Applying the composer's principles, the augmented sixth chord in this passage is an Aug⁴₃ that resolves as expected to root position tonic and is prepared by its origin.

The harmonic succession and voice leading of this progression align perfectly with Example 284 (§100).



Figure 3.1: Tchaikovsky, Symphony 5, movement 2, mm. 43–45 (arr. Pachulski) with Roman numeral annotations. Note that the B natural above the V_3^4 is a suspension that is resolved at the end of measure 43.

Moreover, Aldwell, Schachter, and Cadwallader explain the contrapuntal function of the crucial E_{P} as a passing tone between E_{P} and D_{P} that is heavily emphasized by repetition and duration (ibid.: 581). While this is certainly true, a closer look at the orchestral score and its larger context (refer to Figure 3.2) shows that the E_{P} and its associated augmented sixth chord are responsible for articulating the end of a mid-level, phrase-like segment.²¹ There is thus tension between Aldwell, Schachter, and Cadwallader's contrapuntal designation of this chord and its contributions to the mid-level grouping structure of the passage, as the following discussion shows that its passing tone function does not capture the significance of the chord to the phrase.

The passage in which this chord is situated (mm. 39-45, Figure 3.2) builds momentum using material from the initial solo horn melody, marking the start of the lengthy, 18-bar approach to the climax in m. 56. The full approach comprises a series of swells in tension generated by increased chromaticism and harmonic contrast, heightened rhythmic activity, higher registers and dynamic levels, and increased tempi—tempered by brief resolutions. The

²¹ There is not a true cadence at the end of this segment, so it is "phrase-like."

 $\langle V_3^4 - Aug_3^4 - I \rangle$ progression in mm. 43–45 draws out the tension at the end of this first unit and leads the music to its local release on the downbeat of m. 45, where the tension-release process begins again using material from the second theme. The progression provides harmonic contrast and chromaticism at the end of m. 43 with the *fortissimo* E in the bassoon that follows the diatonic V_3^4 chord, its duration extended by the sudden ritenuto that counteracts the *poco più animato* established in m. 39. This is followed by a tutti ξ . silence at the much slower *Tempo*

primo (\downarrow = 54), leaving the dissonance at the end of m. 43 unresolved. The Aug⁴₃ returns after

the silence in a suddenly reduced orchestration and dynamic level, played by the horns, bassoons, and clarinets at a soft p that diminuendos to pp at its resolution to D major in m. 45. The sudden textural contrast and low register voicing of the Aug⁴₃ emphasize its harmonic tension and indicate the forthcoming resolution. The Aug⁴₃ and its resolution thus establish the boundary of this first segment within the passage that approaches the climax in m. 56.



Identified in Gauldin (2004), Act 1, Scene 6 of *The Nutcracker* ballet (see Figure 3.3) involves a more complex example of an augmented sixth chord. The final four chords of the progression are of interest: $\langle G \#^{07} - C \#^{07} - Augmented sixth^{22} - B \nexists$ major $\frac{6}{4}$.

²² Gauldin (2004) refers to this chord as a German augmented sixth (18).



Figure 3.3: Tchaikovsky's piano arrangement of *The Nutcracker*, Act 1 Scene 6, mm. 124 - 127. The augmented sixth chord is boxed in black in m. 125 (note that the D# within the box is a non-harmonic tone).
Gauldin explains the augmented sixth as part of a hybrid wedge progression (2004: 18), as we have discussed in Chapter 2. Like many of the other augmented sixths included in wedge progressions, the chord in m. 125 is best described in Tchaikovsky's terms as an enharmonically spelled Augx4 of B^b major. The augmented sixth interval expands to scale degree five and the ³/₃ resolving tonic is a major ⁶/₄, corresponding almost exactly with Example 291 (see Chapter 2, Figure 2.4). The only element inconsistent with the composer's suggestions is the preparation at the beginning of m. 125, which features a C#⁰⁷ (#ii⁰⁷) chord in place of the expected diatonic ii⁷/₃ sonority. In fact, this chord is closer to the chromatically altered origin of the Augx4 (ii⁷/₃ with #2, ^{#4}/₃, and ^{#6}) than to its diatonic origin. It contains #2 and #4, but 6 remains the diatonic G[#] and B[#]

All the unexpected pitch classes in this $C^{\#07}$ chord can be explained by the wedging counterpoint of this passage. First, the Gth that appears in the place of the expected G[#], which

would form a perfect, rather than a diminished fifth with the root, is a logical consequence of the descending chromatic bass line and hastens the harmonic rhythm towards the thematic boundary. This boundary is articulated by the F^{\u03e4} in the bass, which is followed by a rest and contrasting melodic material. Similarly, the C^{\u03e4} is an ascending chromatic passing tone en route to the D6 registral peak of the triplet accompaniment in the passage, played by the first flute.²³ Finally, the B^{\u03e4} is a common tone from the G^{\u03e4o7} chord in m 124 and maintains smooth connections in the middle voices while the outer voices diverge in their characteristic wedge. Therefore, although it deviates slightly from Tchaikovsky's models, the preparatory chord maintains both smooth voice leading and the underlying contrapuntal structure of the passage.

Similarly, Henry Zajaczkowski analyzes the return of the Fate motive in mm. 279-80 of Symphony 4, Movement I in terms of repeated segments of the five-chord omnibus. Figure 3.4 presents the excerpt, illustrating the voice exchange characteristic of this progression. He labels the chords as a repeating <chord 2, chord 3, chord 4> series with a German 6th in the chord 2 position and its inversion in the chord 4 position (Zajaczkowski, 1987: 40, 57).



Figure 3.4: Tchaikovsky, Symphony 4, movement I, mm. 279-80 (arr. Singer) with added Roman numerals. Red boxes indicate locations of the augmented sixth chord and the inversion of its origin.

²³ This C \natural - C \sharp - D \natural passing motion is doubled in the oboe, first A clarinet, and French horns. The voice leading of the piano reduction does not clearly represent this motion.

Using Tchaikovsky's augmented sixth chord labels, this progression can be described as voice exchange between an enharmonic Augx4 of F and an inversion of its chromatically altered origin, facilitated by an intermediary F minor ${}_{4}^{6}$ triad (i.e., Aug_{x4} - f_{4}^{6} - $ii {}_{5}^{6}$). Although the chord is spelled as an Aug⁶₅ of C, its resolution to the F minor $\frac{6}{4}$ without a following C major triad and with the augmented sixth interval expanding to the fifth of F minor are behaviours unique to the Augx4. The final diminished third chord is analyzed as an inversion of the $\frac{2}{3}$ chromatically altered origin because it does not resolve to root position tonic. Note that the diminished third is spelled as a diminished tenth, which corresponds with Tchaikovsky's recommendations. Consulting Gauldin's (2004) theory of wedge progressions helps further clarify the underlying contrapuntal structure of the passage. In Gauldin's terms, this is a repeated <10, 0, 2> chromatic diverging wedge progression that features voice exchange. The pattern generates the unexpected minor tonic $\frac{6}{4}$ resolution of the Aug_{x4} and the ensuing inverted origin chord and its repetition implies its motivic relevance, which accounts for the seemingly abnormal elements of this progression.

The orchestration of this example (Figure 3.5) calls attention to this underlying contrapuntal structure. It simultaneously juxtaposes its stable and unstable elements, realizing each layer of the motivic voice leading process in contrasting instrument groups. This results in streams of orchestral textures that correspond to the different contrapuntal elements that comprise the chromatic wedge pattern. First, the familiar (and therefore abstractly stable) fate theme is played by the F-trumpets, cutting through the busy texture of the surrounding voices. It contrapuntally anchors the chromatic wedge progressions and resulting voice exchange through repetitive emphasis on the pitch class F, which is common between all three chords. This repetition further reinforces the theme's stability. The chromatic, and therefore unstable, voice exchange occurs within the winds, remaining brass, and the contrabass in a steady dotted-quarter pulse of the 9/8 meter. While the alignment with the written meter draws attention to the wedge counterpoint, the tension in the passage is heightened by the grouping dissonance in the strings (with the exception of the contrabass), which creates a cross pulse between the strings and the rest of the orchestra. The sixteenth notes in the violins, viola, and cello are parsed into groups of four, based on the repeated Ab-Ab-G-F motif that persists throughout all four parts. The fournote duple grouping shifts the motif in and out of alignment with the triple grouped, dotted-quarter pulse, creating metric dissonance that complements the contrapuntal dissonance of the wedge progression.



Figure 3.5: mm. 278-9 of Symphony 4, movement 1.

Figure 3.6 is concerned with an inverted augmented sixth chord that Aldwell, Schachter, and Cadwallader (2011) identify in Tchaikovsky's Symphony 5, movement I, mm. 56-57, which they describe as a German 6^{th} in $\frac{4}{2}$ inversion (Aldwell, Schachter, & Cadwallader, 2011: 579). From Tchaikovsky's perspective, this chord is not an inverted augmented sixth at all, as it does not resolve correctly to the local tonic. The given progression is E minor: iv – inverted Ger6 –

 V_3^4 . Reinterpreted according to the composer's logic, the so-called augmented sixth chord is constructed relative to the local tonic of B major (articulated by the seventh chord that Aldwell, Schachter, and Cadwallader label V_3^4). Indeed, its augmented sixth interval is constructed between C and A#, which suggests a B tonic. The other pitch classes in the chord (E and G) imply that this could be an Aug_5^6 of B. However, the dissonant interval does not follow the prescribed voice leading at its resolution: only the A# resolves as expected, whereas the C does not fall to B. Coupled with the $\frac{4}{3}$ inversion of the local tonic, this lack of characteristic voice leading disqualifies sonority from being classified as an augmented sixth chord. Instead, Tchaikovsky's recommendations account for it as an inversion of the chromatically altered origin of the Aug_5^6 of B major (vii⁶₅ with \flat 2).



B maj. Aug₅

Figure 3.6: Excerpt from Aldwell, Schachter, and Cadwallader, Example 30-34 (Aldwell, Schachter, & Cadwallader, 2011: 579) with additional annotations. Mm. 56-7 of Symphony 5, movement I.

In his analysis of mm. 62 – 78 of Scene 2 from *The Sleeping Beauty*, summarized in Figure 3.7, Steven Laitz highlights an inverted augmented sixth that he identifies as German (Laitz, 2016: 580). Contrary to the previous two examples of supposed inverted augmented sixth chords, it can also be described as such by Tchaikovsky.


Figure 3.7: Reduction of mm. 71-73 of Scene 2 from The Sleeping Beauty, with harmonic annotations.

The analysis below Figure 3.7 shows that applying Tchaikovsky's rules from Example 294 (§106) to this first chord results in an inverted enharmonic Augx4 chord of A major that is both 3 correctly prepared and resolved. The augmented sixth characteristically resolves to the fifth of the chord, converging as a result of the chord's inversion. The only deviation from Tchaikovsky's recommendations in this example is the initial supertonic harmony is missing the expected added seventh. However, this abnormality appears inconsequential, as the voice leading between the ii⁶ and Augx4 remains smooth and correct.

Laitz also finds the same inverted augmented sixth a few bars later in the passage. It is shown in Figure 3.8, with harmonic annotations to illustrate the enharmonic relationship between the Aug^{#6} in Figure 3.7 and the Aug⁶ here. The augmented sixth chord is spelled identically to $_{3}^{*}$ the first, however its resolution pattern directly corresponds to Tchaikovsky's Example 287 (§101), which temporally displaces the resolution of the augmented sixth interval by $_{4}^{6} - _{3}^{5}$ suspension motion. Therefore, despite the identical spelling, this chord is an Aug⁶ of E major that resolves correctly via temporal displacement to root position tonic. Unexpectedly, this example passes through a major $_{4}^{6}$ chord en route to the tonic. Consequently, the C4 moves up by step to C#, while the A natural is suspended. The chord's inversion allows this deviation because the D# is now voiced below the A, creating contrary motion. In both of these examples, the diminished third that results from the inversion is voiced correctly as a diminished tenth. This is a real musical example that shows how important voice leading and resolution patterns are in determining the identity of an (inverted) augmented sixth, as discussed in Chapter 2.





Laitz and Zajaczkowski have also cited examples of augmented sixth chords that participate in modulations. In *The Sleeping Beauty*, Laitz identifies a modulation to bII via an enharmonically reinterpreted German 6th chord (Laitz, 2016: 285-6). The passage in question is the first six measures of Variation V from the Scene 3 "Pas de six" and is reproduced in Figure 3.9.



Local tonic (suggested by +6 chords): A major

The progression in Figure 3.9 corresponds directly with Tchaikovsky's Example 293 (§105), which features an enharmonic pivot between Aug_5^6 and V^7 , allowing for the music to transition into a key whose root is a tritone away from the local tonic. The pivot occurs on the Aug_5^6 of A which is equivalent to the V_2^4 of Eb major. Interpretation by application of Tchaikovsky's principles results in a more chromatic key scheme (I – bV) than the I - bII scheme proposed by Laitz (2016). This is a consequence of the local, rather than global tonic definition in these first few measures prescribed by Tchaikovsky's rule that augmented sixth chords always resolve to tonic. This example also features clean resolutions of inverted Aug_5^6 to root position tonic: since the sonority at the moment of resolution features only octave A naturals, the augmented sixth interval is resolved normatively and there is no danger of illegal parallel octaves or fifths. This example demonstrates that the enharmonic reinterpretation modulation given by Tchaikovsky in §105 holds true when the augmented sixth chords are inverted.

Figure 3.9: mm. 1-7 of Variation V "Violente" from Scene 2 "Pas de six" in Tchaikovsky's Ballet *The Sleeping Beauty* (arr. Siloti) with Roman numeral annotations.

Zajaczkowski (1987) identifies an augmented sixth chord used to modulate at the emergence of the love theme in Tchaikovsky's fantasy overture *Romeo and Juliet*. Occurring in mm. 183-4, the modulation is summarized in Figure 3.10 and connects the disparate keys of D and Db (C#) major. While Zajaczkowski adopts an enharmonic C# major reading of this passage, Tchaikovsky's principles allow for it to be understood in its original notated key.



Figure 3.10: Reduction of Tchaikovsky, Romeo and Juliet, mm. 183-4, with voice leading annotations.

The modulation is fairly normative according to §105. The interval notated as a (compound) minor seventh between Ath and Gth in m. 183 expands at its resolution to octave Aths in m. 184. This indicates that it is an enharmonically notated augmented sixth. That this interval expands to the fifth (Ath) of the new tonic chord indicates that the chord it belongs to is an Aug^{#6}₃ of Dth, whose usual spelling (Eth, Gth, Bth, and Dth) partially matches the notated pitches (Eth, Gth, Ath, C[#]). The two spelling differences are enharmonically equivalent, which indicates that this modulation is enacted by means of an enharmonic pivot between the dominant seventh of D major and the enharmonic Aug^{#6}_{x4} of Dth major. Reading this passage in the notated key makes the ^{#6}₃ modulatory process much easier to identify and requires fewer enharmonic translations, reinterpreting only two pitches instead of an entire key.

Ellis (2016) analyzes a peculiar chord progression in mm. 97 - 103 of the finale of Tchaikovsky's Sixth symphony that capitalizes on the enharmonic relationship between the $^{\#6}_{3}$ Augx4 and the V7 of two keys a semitone apart. The score is given in Figure 3.11 with three $^{3}_{3}$ chords marked by arrows. The last chord, Ellis says, is a French augmented sixth moving to a dominant chord in mm. 102-3. In Tchaikovsky's terms, it is an inverted Aug $^{4}_{3}$ of F# major, resolving exactly as expected to root position (local) tonic. The inversion is voiced and voice-led correctly; a diminished tenth converging to an octave. Unusually, it is prepared by a C $^{\#07}$ chord instead of its C $^{\#7}$ diatonic origin, the logic of which is discussed below. Ellis is perplexed by the first two arrow-marked chords, each of which is a sonority that he identifies as sounding like an augmented sixth, but that is spelled and resolves like a dominant seventh (Ellis, 2016: xv).



Figure 3.11: mm. 97 – 103 of Symphony No. 6, movement IV, brass, with wedge interval annotations. The augmented sixth chords identified by Ellis are indicated by arrows on the score. The dotted square indicates the breakdown of wedge in the final two measures.

Tchaikovsky's principles clarify that the first of these chords, in m. 98, could be regarded as an enharmonic Augx4 of B minor, [Cx, E#, G4, B4], respelled as the notated G⁷ chord. This equivalence explains why Ellis (2016) hears this chord as an augmented sixth, even though it is not notated as one. The F# to which the enharmonic augmented sixth interval would be expected to resolve has been repeated and prolonged in the preceding bars: to suddenly hear the two semitones that surround it would immediately suggest an augmented sixth chord. Examining key relationships, the expected F# is a tritone away from the tonic to which the G dominant seventh (enharmonic Aug_{x4}) is related. This follows exactly the relationship identified by Tchaikovsky in §105. Similarly, the second augmented sixth chord in m. 100 could be understood as an enharmonic Aug_{x4} of A, which is enharmonically equivalent to the V⁷ of B^{\flat} spelled in the score. However, Tchaikovsky's theory cannot account for the preparation and resolution of these dominant seventh/enharmonic $\operatorname{Aug}_{x4}^{\#6}$ chords and of the final $\operatorname{Aug}_{3}^{4}$ of the passage. The abnormal resolutions of these first two chords seriously undermine their augmented-sixth-chord #6 identities: the apparent enharmonic Augx4 of B minor resolves to an E dominant seventh chord in first inversion, and the enharmonic $\operatorname{Aug}_{x4}^{\#6}$ of A resolves to a D dominant seventh chord. It is useful to consult Gauldin (2004) in our interpretation of the voice leading in this passage. The excerpt can be divided into three two-measure units, each separated by a tutti eighth rest and transposed by a descending diatonic (B minor) step with each iteration according to the tuba melody. The three chords in the first two units form a convergent <0, 10, 8> chromatic wedge segment between the bass tuba and bass trombone. The falling chordal seventh created by the

enharmonic spelling facilitates the progression of pitch class interval 10 to pitch class interval 8. This wedge is a retrograde of the expected <8, 10, 0> segment that typically involves an #6 enharmonic Augx4, as a result of its converging contour.

Since the wedge pattern is driving the counterpoint (and thus the harmony), the intense dissonance and unexpected voice leading can be justified by adherence to this underlying motivic voice leading structure. The sudden textural and instrumental contrast aurally emphasizes this wedge process: the previous measures' high rhythmic activity, perpetuated in a thick orchestral texture by essentially every instrument *except* the trombones and tuba, shifts suddenly to a slow low brass chorale. The contrast highlights the dissonance, the distant key relations that underpin the first two arrow-marked chords, and the motivic counterpoint that motivates the ambiguous harmony. Notice also the metrically accented positions of the ambiguous chords, which draw attention to them and increase the harmonic tension within the passage. The ambiguity and tension are then resolved by the relatively normative inverted Aug_3^4 – I resolution in the final two bars of the passage.

Previous analysis has demonstrated that it is possible for Tchaikovsky's and Gauldin's theories to cleanly intersect. However, this is not the case here: the <10, 8> interval class progression built into the wedge results in incorrect voice leading for resolving augmented sixth chords of any inversion, as they do not progress to their expected tonic chords. Thus, these chords are best described as chromatically altered origin chords (hereafter: CAOC's) of the

#6

enharmonic Aug_{x4} that relate to the root of the chord that precedes them. These contain all of the 3

#6 pitch classes of enharmonic Augx4 chords and are voiced correctly, but do not behave as such 3

and so cannot be defined as augmented sixth chords. The label CAOC provides a categorical explanation for Ellis' initial confusion surrounding the identity of these chords and demonstrates the flexibility with which augmented sixth chords may be approached in Tchaikovsky's music. Indeed, these CAOC's share many contextual characteristics of normative augmented sixth chords. First, they are fully integrated into the motivic voice leading of the passage. Moreover, they are used locally as a means of generating harmonic tension and ambiguity, a function that will arise frequently in Chapter 4. Finally, they are used as part of a developmental technique (i.e., a sequence) within a large-scale development section.

The C $^{\mu07}$ preparation for the final inverted Aug⁴₃ is unexpected in the context of Tchaikovsky's principles and still motivically unaccounted for. While its C $^{\mu}$ root is usual, its half-diminished quality is abnormal in this context. This chord is the result of a slightly altered version of the tuba melody on the downbeat of m. 102, which ascends a whole tone from D $^{\mu}$ - E $^{\mu}$ instead of the expected semitone, shown by the blue circle in Figure 3.11. This maintains contrary motion over the bar line, but of a diatonic rather than chromatic character. The wedge progression that characterizes the previous two units thus breaks down at this point, and a <0, 9, 8, 7> interval class progression occurs between the previously chromatically converging bass trombone and bass tuba. The inverted augmented sixth chord is located at the interval class 8 place in the series, indicating that it is no longer the result of wedged voice leading. Instead, the diminished tenth occurs between the E $^{\mu}$ in the tuba and the G $^{\mu}$ in the tenor trombone. Importantly, this first chord of this unit, as well as the trombone voices of its second chord follow the expected voice leading. However, the bass trombone does not continue its expected descending stepwise $\downarrow \downarrow \downarrow$ pattern in the second half of m. 102, which confirms the breakdown

of the wedge progression and enables the Aug_3^4 on beat 4.

The reasons for these breaks in the sequential structure are clarified by the formal function, harmonic succession, and counterpoint of mm. 102 - 107, shown in Figure 3.12. The final unit of this chromatic brass passage is followed by a diatonic progression in B minor (a prolonged cadence of the second class ($\S49$)) that articulates this home key's return in m. 107 and concludes this large-scale formal development section. Measure 107 marks the beginning of a new thematic section, at a new tempo with new motivic techniques, dynamics, and orchestration. Considering the heavy emphasis on F# in the passage prior to m. 97, when the music is standing on the dominant of B minor, it is unsurprising that we return to this sonority in m. 103. The logical goal of the chromatic brass sequence's final unit is thus to reach F# major. This is achieved most convincingly by the inclusion of the leading tone in the tuba melody, which creates the augmented Aug_3^4 chord that is effectively tonicizing the following F# major (akin to the modulatory digression). If the tuba had followed its previously established melodic pattern and the goal of the progression were still F#, the pitch classes series in mm. 102-103 would have been <D4, D#, E4, F#>, leaving no space for the leading tone. Therefore, both the abnormal C^{# 07} chord and the Aug⁴₃ of F[#] major are the consequences of the tuba's contrapuntally necessary, initial ascending whole tone in mm. 102-3 and its goal directed melodic motion towards F#.



Figure 3.12: mm. 102-107, with Roman numeral annotations showing two possible interpretations of mm. 102-3 in B minor or F# major. Dotted pivot bracket shows that the music transitions to B minor in m. 103.

By this same logic, it would be impossible to complete all three of the following processes in this passage: 1) maintain the characteristic tuba melody, regardless of whether or not it has been modified to include the initial ascending whole tone; 2) include the expected diatonic origin of the Aug_3^4 (C# major-minor seventh); and 3) tonicize F# major by including the E# leading tone. Each of these processes fulfill a motivic, theoretical, and contrapuntal aim of

this passage, respectively. In a scenario where he can choose a maximum of two out of three, Tchaikovsky has chosen, and then intertwined, the two that fulfill the motivic and contrapuntal aims of the excerpt (elements 1 and 3, respectively).

While a modern approach to this passage would support the interpretation of the $C^{\#07}$ chord as a ii⁰⁷ predominant chord in B minor, this imposes a harmonic functionality that is anachronistic to Tchaikovsky's approach and glosses over the integral role of the tuba melody in the contrapuntal structure of the progression. It also disconnects the augmented sixth chord from its preparation and theoretical context by considering the $C^{\#07}$ and Aug_3^4 to be each related to two different tonics. While this kind of tonal separation is not unheard of in Tchaikovsky's work (it exists, for example, in modulations shown in Example 289 in Figure 2.11 (§102)), the C# root of the chord strongly suggests its relationship with F# major. Unpacking the contrapuntal and melodic structure of this brief excerpt demonstrates how, when taking Tchaikovsky's principles into account, the C#⁰⁷ is more closely related to the expected C# dominant seventh, than to the supertonic seventh chord of B minor. The C#⁰⁷ chord seems like the next best thing to the expected C#⁷: it maintains smooth voice leading with the following Aug_3⁴, sufficiently preparing all of the chromatic pitches in the augmented sixth chord, despite its unexpected quality.

The final two examples discussed in this chapter indicate how augmented sixth chords in Tchaikovsky's orchestral music may contribute to the form of a piece. First, Graham Hunt (2020) analyzes a German augmented sixth chord that concludes the modulatory transition (Figure 3.13) between the principal and subordinate themes in Tchaikovsky's fantasy overture *Hamlet*, Op. 67. After the augmented sixth chord, a full measure of rest acts as a medial caesura and the subordinate theme begins in the new key. He argues that this exemplifies a type of

medial caesura that is new in 19th Century sonata form, as the augmented sixth is integral to the articulation of the boundary between the transition and subordinate theme.



Figure 3.13: Tchaikovsky, *Hamlet*, mm. 138 - 146, with Roman numeral annotations and Hunt's (2020) "augmented medial caesura" (151).

Although spelled as a G⁷ chord right before the double bar, the notated minor seventh interval expands to F#'s in m. 145 after a brief melodic link that suggests the dominant of B. The F#'s are the fifth of the B minor 6/4 chord in m. 145, which—in combination with the spelling of the chord in m. 143 relative to B minor—classifies this progression as another enharmonic

 $\operatorname{Aug}_{x4}^{\#6} - \operatorname{i}_{4}^{6}$. This provides another instance of an enharmonic pivot modulation with $\operatorname{Aug}_{x4}^{\#6}$. The $_{3}^{\#6}$ G⁷ chord in mm. 141-2 is the dominant of C minor, the key that governs the end of the transition (before the double bar) and the modulation moves between keys that are a semitone apart.

However, the location of the tonic arrival in the new key within each interpretation illustrates a fundamental difference between Hunt's modern approach and Tchaikovsky's theory. Whereas from Tchaikovsky's perspective, the B minor $\frac{6}{4}$ in measure 145 is considered a true tonic participating in a (slightly modified)²⁴ prolonged cadence of the first class, Hunt understands it as part of a cadential $\frac{6}{4}$, an essentially dominant harmony (Hunt, 2020: 151). There are thus two resolutions to the new tonic within these measures from Tchaikovsky's perspective—the normative tonic ${}_{4}^{6}$ resolution of the Augx4 and the root position tonic that concludes the cadence of the first class-and only one from Hunt's. Despite these discrepancies, the two interpretations both contextualize the augmented sixth chord within a significant cadential progression. Hunt argues that the cadential $\frac{6}{4}$ – i progression "...retroactively explain[s] the augmented sixth chord as the cadential pre-dominant...and complet[es] the cadential progression after the new theme has begun" (ibid.). Applying Tchaikovsky's principles, the prolonged cadence of the first class certainly retroactively highlights the role of the Augx4 in the cadential progression. However, the progression emphasizes the chord's role as the main agent in achieving the enharmonic modulation and propelling the music towards a cadence (an

 $^{^{24}}$ This progression is missing the prescribed B minor ii4/3 prior to the Aug#6/x4/3. Since the augmented sixth chord achieves the pivot of the modulation, there isn't space for it to be included.

expectation generated by the accented tonic ${}_{4}^{6}$ in m. 145) instead of contextualizing it as a dominant preparation.²⁵

Given that the augmented sixth chord is closely integrated into the cadential progression that confirms the modulation in both interpretations, it is safe to say that Hunt's formal function observations persist with Tchaikovsky's harmonic labels. Therefore, this example demonstrates the potential for formal functionality of augmented sixth chords in Tchaikovsky's music: this chord and its ensuing progression are participating in the articulation of a mid-level formal boundary between the transition and subordinate theme. Hunt (2020) points out that this initial cadence in the subordinate key is essential because the music does not feature an authentic cadence in B minor for the rest of the section (151). The four-bar duration of the enharmonic $\frac{#6}{3}$

attention to its concluding function. Moreover, the cross pulses that result from the syncopated triplets over the steady quarter-note pulse breaks the metrical momentum at the end of the transition, which further highlights the local concluding function of the chord.

#6Notably, this type of enharmonic semitonal modulation with an Aug_{x4}, featuring a 3

prolonged cadence of the first class that occurs across the thematic boundary also occurs in the previously discussed *Romeo and Juliet* modulation, presented and discussed in relation to Figure 3.10. Recall that the modulation occurs right at the boundary of the love theme's arrival: the enharmonic Augx4 is within the preceding section, while its resolution to Db major $\frac{6}{4}$ occurs

²⁵ Recall that the idea of dominant "preparation" imposes a harmonic functionality that is anachronistic to Tchaikovsky's approach.

simultaneously with the start of the first iteration of the love theme. The music then progresses to a V⁷ of D^b major, suggesting a cadential ${}^{6}_{4}$ in modern terms, followed by a first inversion D^b major tonic. While these two modulations are not exactly the same (i.e., the root position D^b tonic does not arrive after the root position dominant, therefore undermining the strength of the prolonged cadence of the first class), they are extremely similar. Both progressions feature enharmonic Aug_{x4} chords that mark a significant thematic boundary and enact a semitonal 3 modulation that is confirmed across formal sections. This recurrence is highly suggestive of another type of formal functionality that may be ascribed to augmented sixth chords in Tchaikovsky's music: articulation of mid- and high-level sectional boundaries.

The last analysis we will consider from the literature is Zajaczkowski's treatment of a passage from the First Symphony, another semitonal enharmonic modulation (refer to Figure 3.14) that provides a brief transition between two formal sections, the "false" and "true" codas at the end of the first movement (Zajaczkowski, 1987: 56). The augmented sixth chord itself is an enharmonically spelled, inverted Augx4 of G major. After its prolongation for 10 measures, the $\frac{46}{3}$ inverted augmented sixth chord is reinterpreted as the dominant seventh of Ab major by resolving to this new tonic. Notably, this modulation does not occur at the immediate location of the formal boundary and so does not necessarily articulate the thematic boundary with the same as do those in Figure 3.10 and Figure 3.13. Instead, the inverted augmented sixth chord occupies a transitional space that unexpectedly introduces continuation function through harmonic contrast $\frac{46}{3}$ between the two sections. The enharmonic reinterpretation of the inverted, enharmonic Augx4 as

 V^7 of Ab results in the retroactive recontextualization of the "false" coda's structural level of operation, re-defining it as the end of a section instead of the end of the movement as a whole.

The end of the false coda "lull[s] the listener into expecting the close of the movement" (Ibid.) through repeated vii^{o7} – I motion over a tonic pedal in G major. This harmonic succession is slightly ambiguous, obscured by the repeated motivic fragments. Nevertheless, the harmony at the end of the first coda is static, and the soft dynamics in combination with this passage's location after the reprise of both main themes suggests concluding function. This is further reinforced by a reduction in orchestral texture to only strings, as well as the overall descending registral contour of the chords that accompany the repeated motive. The enharmonic pivot that shuttles the music from G to A^b major occurs in m. 614, but the new tonic remains ambiguous on account of the 10-bar prolongation of the dissonant chord. This sudden harmonic contrast and dissonance reinvigorates the music, suggesting continuation function by necessitating resolution. The sudden increase in energy is compounded by the instrumental contrast created by the reintroduction of the winds and French horns. In m. 624, the second coda begins and this new chord is incorporated into A^b major, resolving as V_5^6 – I. However, the imitative texture between the viola part and the cello and contrabass lines prevents immediate clarity of this new tonic. While the remaining string parts are not strictly imitative, their accompanying melodies play off the initial y JJJ motive in the viola, giving the impression of imitative counterpoint and

generating a new, polyphonic texture. So, the imitative motivic process and harmonic ambiguity continues the momentum incited by the sudden harmonic contrast in mm. 614–623, despite the contrapuntal resolution of the enharmonically reinterpreted, inverted augmented sixth chord.





Figure 3.14: Tchaikovsky's Symphony 1, movement 1, mm. 604 – 625 with annotations.

3.3 – Conclusions and Motivations for Chapter 4

In summary, from my analytical application of Tchaikovsky's principles to published analyses, some general observations can be made about uses of augmented sixth chords in Tchaikovsky's orchestral music. First, many of the examples incorporate the $\operatorname{Aug}_{x4}^{\#6}$, often in enharmonically spelled realizations and frequently as part of an enharmonic pivot modulation. While this implies that the $\operatorname{Aug}_{x4}^{\#6}$ is truly a frequently used chord in Tchaikovsky's compositions, it could also reflect the analysts' collective interest in complex chromatic harmonic and contrapuntal procedures over typical resolutions of augmented sixth chords. The analyses I will present in Chapter 4 will account for more examples of simple resolutions of augmented sixth chords according to Tchaikovsky's principles. Interestingly, Zajaczkowski identifies the German augmented sixth sonority (often equivalent in the above examples to the

Aug_{x4} or the Aug₅⁶) as a "generally common feature of Russian music" (Zajaczkowski, 1987: $_{3}$

64). If this is true, then the high frequency of $\operatorname{Aug}_{x4}^{\#6}$ chords analyzed in this chapter could reflect 3 a national stylistic trend.

Additionally, these examples demonstrate how flexibly Tchaikovsky treats augmented sixth chords relative to his theoretical teachings. Deviations from his pedagogical models occur, but these unexpected behaviours are consistently analytically accounted for by adherence to motivic and/or contrapuntal structure and/or strong and correct voice leading. Recall the discussion of Figure 3.3 in which the abnormal fully diminished quality of the augmented sixth's preparatory chord is tolerated because the harmonic "rules" are overridden by a strong, goaldirected, chromatic descending bass line. Similarly, the example given in Figure 3.11 and Figure 3.12 shows how prioritizing fulfillment of the contrapuntal and motivic aims of a passage can allow for deviations in theoretical elements such as the quality of the augmented sixth chord's preparation. This is also reinforced by other examples, such as that summarized in Figure 3.8, which demonstrates how abnormal behaviours can be rendered inconsequential on account of how the progression maintains smooth voice leading and direct connections to other of Tchaikovsky's pedagogical recommendations. This application helps to prioritize musical elements in analysis: whereas the missing chordal seventh in the preparatory harmony in Figure 3.8 has no effect on the identity of the ensuing augmented sixth chord, resolution of any of the

three types of augmented sixth chord to first or second inversions of tonic (Augx4 $_3$ notwithstanding) changes the identity of the chord (recall Figure 3.6).

In the spirit of self-motivated musical discovery promoted by the composer in his footnote to §13, some of the examples identified in this chapter demonstrate logical extensions of the rules outlined in the manual but that are never explicitly demonstrated. The most notable examples of this pertain to modulation. In §105 of the Guide, Tchaikovsky demonstrates how the $\operatorname{Aug}_{5}^{6}$ can be used as part of an enharmonic pivot in semitone modulation. However, he only #6 briefly mentions the enharmonic relationship between dominant seventh chords and the Augx4, 3 without demonstrating how this fourth type of augmented sixth chord may be involved in an enharmonic pivot. He models only how this enharmonic relationship creates tension between the tonic and dominant of a key, depending on its spelling. Figures 3.10–3.14 fill this gap by demonstrating how $\operatorname{Aug}_{x4}^{""}$ chords—often enharmonically spelled and occasionally inverted can be very effective pivots in semitonal modulation via enharmonic reinterpretation. Additionally, in §106 Tchaikovsky distinguishes between inversions of augmented sixth chords and inversions of their origins based on the voice leading of their resolutions. Although not explicitly stated, since inverted augmented sixth chords maintain their identities under inversion, it follows that they should be readily applicable in any context that the usually voiced chords may appear. While the examples presented in this chapter do not represent an exhaustive list of possible contexts in which inverted augmented sixth chords may arise, many highlight their use in modulations (e.g., the inverted Aug_5^6 in Figure 3.9 in addition to the several inverted,

enharmonic Augx4 pivots) and as articulating formal boundaries. This affirms that inverted 3
 augmented sixth chords can hold similar voice leading and harmonic functions as those of their usually-voiced counterparts in Tchaikovsky's model progressions. This will be further
 demonstrated in Chapter 4.

Overall, the analyses in this chapter are useful because they examine several augmented sixth chords in a variety of contexts across a large sample of Tchaikovsky's orchestral works. The reinterpretations of modern analyses in Tchaikovsky's terms effectively highlights differences between the approaches beyond the contrasting chord labels. For instance, Figure 3.6 and Figure 3.11 present examples that are analyzed as augmented sixth chords by modern theorists but are categorized as either inverted or chromatically altered origin chords (therefore not augmented sixth chords) when Tchaikovsky's theoretical framework is taken into account. This reinforces the prioritization of voice leading for the composer. Additionally, these comparisons point out differences in the conceptualization of tonic as a harmonic category; recall the differing roles of the i_4^6 in defining the new tonic in Figure 3.13 between Hunt's (2020) interpretation and the perspective outlined in Tchaikovsky's manual. It also demonstrates intersections between modern approaches and Tchaikovsky's principles, which supports the evaluation of how these chords are used motivically and with reference to formal structure and function. Additionally, Examples such as Figure 3.11 and Figure 3.12 have shown that applying Tchaikovsky's theories in analysis can shed light on chord progressions that are ambiguous when approached with modern theoretical frameworks.

Most importantly, discussion has demonstrated that Tchaikovsky's principles are readily applicable as analytical tools. As abstract compositional models they articulate clear expectations, but their application is flexible, bending and logically extending the rules that the

composer puts forth resulting in the integration of the augmented sixth chords into the motivic, contrapuntal, and formal dimensions of the music. While certainly not an exhaustive list, this chapter demonstrates the wide range of possible functions and structural levels of operation adopted by these chords, ranging from surface-level embellishment to mid-level and large-scale contributions to musical processes. It is clear that Tchaikovsky's pedagogical principles are useful in understanding how augmented sixth chords are used in his music.

Despite these insights, examining several examples across multiple works does not allow for an in-depth investigation of how augmented sixth chords contribute to and operate within their larger musical context. While local form functional and motivic analysis is possible, extracting the example from its original setting necessarily omits some essential motivic, contrapuntal, and formal details that may be unique to the piece of music. Moreover, this methodology does not allow for the investigation of how augmented sixth chords may relate to each other within a single work. These elements can only be explored by focusing analysis on the augmented sixth chords within a full musical unit, such as a complete movement or work. This motivates the in-depth analysis of augmented sixth chords in the first movement of Tchaikovsky's Sixth Symphony in Chapter 4.

Chapter 4: Augmented Sixth Chords in Tchaikovsky's Symphony 6, Movement I

4.1 – Introduction and Methodology

This chapter presents an in-depth analysis of the first movement of Tchaikovsky's Symphony 6, Op. 74. It applies a methodology similar to that of Chapter 3—that is, interpreting real musical examples of augmented sixth chords using Tchaikovsky's principles—but I have sought out each example myself and have not considered previously published analyses of these excerpts. These analyses extend the results in Chapter 3, balancing investigative focus between applying Tchaikovsky's principles to interpretations of individual chords and considering how the augmented sixth chords fit within and contribute to their full musical context, with special attention paid to the elements of motivic structure, orchestration, formal function across local and global scopes, harmonic and contrapuntal structure, and local foreground embellishment. The results of this investigation show that Tchaikovsky frequently uses augmented sixth chords in this movement to develop the music on multiple levels of structure. When occurring in close proximity to one another, the scope of development often varies between successive chords. Additionally, the following analyses demonstrate how augmented sixth chords can retroactively contextualize each other's roles within a passage and that they are closely intertwined with motivic structure and voice leading processes.

The movement has been selected for several reasons. First, it is from Tchaikovsky's final complete symphony, composed 23 years after his 1871 harmony manual, so his compositional style was well established. More importantly for this investigation, it is saturated with augmented sixth chords of many types that appear in a variety of contexts. This chapter begins with a progressive account of particular instances of augmented sixth chords that play a developmental

role by creating contrast and momentum. These examples first involve foreground embellishments, then middleground processes, and finally contributions to large-scale form. The latter half of the chapter presents analyses of two developmental passages that each feature closely successive augmented sixth chords operating across all levels of structure, demonstrating how Tchaikovsky exploits the multifaceted potential of these chords. In addition, these later analyses show how the proximity of successive chords, and their immediate contexts, encourages aural comparison and functional retroactive reinterpretation, which can help define their various roles and the levels of structure at which they operate. These investigations build on and confirm the results of Chapter 3, showing that consideration of the full musical context is essential for fully understanding how augmented sixth chords are used in Tchaikovsky's music.

4.2 – Analysis

4.2.1 – Individual Augmented Sixth Chords Contributing Development

Both locally and at the mid-level, some of the earliest augmented sixth chords in the Allegro section contribute to the development of its first theme. The first developmental passage I will consider (see Figures 4.1, 4.5 and 4.6) occurs in mm. 29.4 - 36.4 and is divided into two sections of unequal length: (1) mm. 29.4 - 34.3 and (2) 34.4 - 36.4. Both sections have a modular construction, mirroring the structure of the initial basic and contrasting ideas in mm. 19 - 29.3. Each portion can thus be further subdivided: into two-bar units in the first section and into one-bar units in the second. Throughout the passage three musical processes occur simultaneously, realized in different harmonic rhythms in each section. The first is the fragmentation and sequential treatment of the basic idea. The second is a pedal tone realized in repeated sixteenth notes that begins on B natural and is transposed up three semitones at the start of each module. Finally, there is both chromatic and diatonic voice exchange between the violas

and cellos. The combination of these three processes gives rise to the augmented sixth chords in question, all of which resolve to minor 6/4 triads. These processes also draw attention to how the composer develops motivic material by fragmenting and juxtaposing blocks of sound. The rhythmic profile of the pedal tone mirrors that of the contrasting idea, effectively stacking the basic idea and contrasting ideas on top of each other. Zajaczkowski (1987) identifies this as a typical developmental technique in Tchaikovsky's music (25). Each section is examined separately below.

The augmented sixth chords in the first section (mm. 29.4 - 34.3) have two different plausible interpretations and create brief moments of tonal ambiguity.²⁶ Figure 4.1 presents the orchestral score of the first module in section 1 of this excerpt, with the augmented sixth chord highlighted in red. As the second module of the first section is an exact T₃ repetition of the first, only the initial module is discussed in detail here. The augmented sixth chord in m. 31.4 is spelled as an Aug⁶₅ of F# major (pitch classes E#, G\mathbf{h}, B\mathbf{h}, and D\mathbf{h}), with the augmented sixth interval expanding to octave F#'s. The subsequent triad is a B minor $\frac{6}{4}$, followed by what can be understood as either an F# major root position tonic or an A# diminished-seventh chord in $\frac{4}{3}$ inversion. The spelling of the augmented sixth chord, the voice leading of the augmented sixth interval, and the possible F# major interpretation of the final chord in the progression all suggest an F# local tonic. However, a B minor tonic is strongly implied by the immediate resolution of the augmented sixth chord to a B minor triad instead of an F# major chord, by the E minor

²⁶ The tonal ambiguity in this example is similar to that of mm. 73-76 of this movement (see pp. 115-120).

harmonic focus of the preceding measures (mm. 27 - 29.3),²⁷ and by the B natural pedal tone emphasized by the exposed, soli texture for its first two beats.



Figure 4.1: Tchaikovsky Symphony 6, movement I, mm. 29 – 32. This excerpt illustrates the first module of the first section in this developmental passage. Red highlighting indicates the location of the augmented sixth chord.

In addition to the tension established by these elements, Tchaikovsky's theory allows for plausible interpretations of this progression in both F# major and B minor. If we assume a local F# tonic, then this excerpt most closely resembles Tchaikovsky's Example 287 (§101, reproduced below in Figure 4.2), which illustrates one possible correct way to resolve the Aug $_5^6$. This resolution method prescribes the suspension of the fifth and seventh above the origin's root (B\ and D\ in this case) while the augmented sixth interval resolves, resulting in a minor $\frac{6}{4}$ triad that moves to a root position major tonic at the suspensions' point of resolution. This

 $^{^{27}}$ B is the dominant of E, creating local tonic to dominant motion, which is a closer (and diatonic rather than chromatic) relationship than the local tonic to major supertonic motion that would result from moving to F#.

interpretation works well only if the E natural in the cellos in m. 32.2 is heard as a non-harmonic tone, as it allows for the final vertical sonority of the progression to be understood as an F# major $\frac{5}{3}$ triad, preceded by a $\frac{6}{4}$ suspension pair.



Figure 4.2: Tchaikovsky's Example 287 ($\S101$), showing the suspension 6/4 method of resolving Aug⁶₅ chords in order to avoid parallel fifths.

This excerpt also resembles Example 288 (§101, reproduced below in Figure 4.3), which differentiates passing and "actual" (§101) Aug_5^6 chords based on their preparation by either origin or subdominant-category chords, respectively. The first two measures of Example 288 illustrate the passing Aug_5^6 , the most closely related of Tchaikovsky's pedagogical models to the F# major interpretation of mm. 31.4 – 32.2. However, there are still deviations from this model progression in the given symphonic excerpt. Most importantly, although the preparation of the apparent Aug_5^6 is rooted—like its diatonic origin (vii^{o7})—on the seventh scale degree, it is a \flat VII⁶ triad that features a lowered root (\flat 7), a doubled root instead of an added seventh, and major instead of fully diminished quality.



Figure 4.3: Tchaikovsky's Example 288 ($\S101$) differentiating between passing (mm. 1-2) vs. "actual" (mm. 3 - 7) Aug⁶₅ chords based on preparation.

Nevertheless, these alterations do not hinder the smooth voice leading of the passage and can be mostly justified by reference to motivic structure. For instance, the octave that replaces the expected diminished seventh in the \flat VII⁶ preparation is a consequence of the design of the basic idea, whose second half involves an ascending perfect fourth leap in the melody from B to E. Including the seventh (D4) would disrupt the developmental process of fragmented repetition with transposition. Moreover, the lowered, subtonic root is justified by the reflexive structure of the basic idea. The basic idea can also be split into two modules, the first of which presents the main melodic unit and the second develops the first with increased rhythmic activity. In this excerpt the second half of the basic idea also uses harmony as a developmental device: whereas the first half maintains purely diatonic harmony (refer to Figure 4.5 for Roman numeral analysis), the second portion of the basic idea introduces chromatic tones. Therefore, it is motivically logical for the chord at 31.4 to contain an E natural rather than an E#, because it is referring back to the E natural in m. 30.2.

Despite the elements of alignment with Tchaikovsky's theoretical models afforded by a local F# tonic interpretation, it is difficult to ignore the previously mentioned contextual cues for

B minor. Luckily, a combination of Tchaikovsky's framework and secondary theoretical sources also supports a B minor interpretation of this progression. Moreover, this interpretation allows for the cellos' E natural at m. 32.2 to be included in the analysis as a chord tone. When this progression is considered in B minor, it most closely resembles Tchaikovsky's Example 291 (§104, reproduced below in Figure 4.4). This example demonstrates how Aug_{x4} chords resolve 3 to tonic $\frac{6}{4}$ chords and my discussion in Part 1 of this paper illustrates that, especially when considered as part of a larger motivic pattern, the resolving $\frac{6}{4}$ triad does not necessarily need to progress to a prolonged cadence of the first class. Resemblance to Example 291 suggests that the augmented sixth chord at m. 31.4 is an Aug_{x4} of B minor.



Figure 4.4: Tchaikovsky's Example 291 (§104) demonstrating the resolution of $\operatorname{Aug}_{x4}^{\#6}$ to tonic $\operatorname{Aug}_{x4}^{6}$ to tonic $\operatorname{Aug}_{x4}^{6}$

Understanding this progression in B minor requires the reinterpretation of a few elements

compared to the F# major perspective. First, it must be recognized that the Augx4 is 3

enharmonically spelled, with the expected Cx notated as D4. Unsurprisingly, this enharmonic spelling is justified by motivic structure: the D4 allows for an exact repetition of the initial

statement of the basic idea, creating cohesion between the theme and its development. Next, the relationship between the penultimate and final chords in the progression must be reinterpreted. Rather than understanding the penultimate triad as a 6/4 suspension pair that embellishes a root position F# triad, these two harmonies are read independently as a B minor $\frac{6}{4}$ triad followed by an A# fully diminished $\frac{4}{3}$.

These two elemental interpretations allow for mm. 31.4 - 32.2 to be read as a fairly normative Aug_{x4} - tonic $\frac{6}{4}$ progression in which the augmented sixth interval expands to the doubled fifth scale degree. In addition to this alignment, the whole module reflects the structure of the pedagogical demonstration in Example 291 (§104). As previously mentioned, the purpose of Example 291 is to show how the Augx4 arises from chromatic passing motion between ii_3^4 and I_4^6 . The example first presents the diatonic version of the progression ($IV^6 - ii_3^4 - I_4^6$, from the first half of Example 291 (§104)) and then inserts the augmented sixth chord in the appropriate position $(IV^6 - ii_3^4 - Aug_{x4}^{\#6} - I_4^6)$. The modules in the first section of this passage both follow the same format. The first half of the modules present the diatonic version of the progression: IV^6 – $(ii_{3}^{4}) - i_{4}^{6} - vii_{3}^{6}$ in B minor for the first module. The second half of the modules include the augmented sixth chord between the subdominant-category preparation and the tonic $\frac{6}{4}$. This draws aural attention to the underlying voice leading process that generates the augmented sixth chord. This progression and its Roman numeral analysis are summarized below in Figure 4.5.



Figure 4.5: Reduction of section 1 (mm. 29.4 - 34.3), with Roman numeral annotations in both F# major and B minor.

While this progression is consistent with many aspects of Tchaikovsky's theoretical framework, it still includes some anomalous elements, all of which can be justified by motivic and voice leading logic. First, the chord that immediately precedes the enharmonic $\operatorname{Aug}_{x4}^{\#6}$ is IV^6_3 instead of the expected ii⁴₃. Despite its omission in the second half of the module, ii⁴₃ occurs in the earlier, diatonic version of the progression. Notably, IV^6 and ii⁴₃ are very closely related, differing by only one pitch class (C#). Therefore, the absent ii⁴₃ is perhaps implied by the IV^6 , which could operate as a rootless ii⁷ chord. Additionally, motivic logic justifies the use IV^6 in

place of ii_3^4 . While the missing C# could have been included as part of the first eighth note beat in m. 31.4 (recalling the $IV^6 - (ii_3^4)$ progression from the first half of the module), its presence would disrupt the repetition of the basic idea by removing the characteristic ascending perfect fourth in the group of melodic sixteenth notes. This would weaken the connection between the initial theme and its development.

Additionally, the first half of the module (mm. 29.4 - 31.2) makes clear that voice exchange is the underlying motivic voice leading process in this first section of the passage. However, the second half of the module features an irregular version of the voice exchange, chromaticized by the Augx4 and modal mixture of the IV⁶ chord that begins the progression. The $\frac{#6}{3}$ exchange is completed for only one of the two pitches (E\[4], but not G\[4]) and occurs between two different boundary harmonies. Moreover, the Augx4 resolves to a minor tonic $\frac{6}{4}$, whereas Example 291 sets an expectation for a major tonic $\frac{6}{4}$.

Recalling my earlier discussion of interactions between Gauldin's wedge progressions and Tchaikovsky's theory, these unexpected elements can be justified by the motivic voice leading structure. Considering mm. 31.4 - 32.3 a wedge progression justifies the contrasting boundary harmonies, as this is a common feature of divergent wedge segments (Gauldin, 2004: 3 - 4). The first half of the module is a <9, 0, 3> diatonic wedge progression, as the diverging voice exchange uses diatonic pitches in B minor to enact a voice exchange. The second half is an <8, 10, 0, 3> hybrid diverging wedge segment that mixes diatonic and chromatic pitches (Gauldin, 2004: 1, 16) unified by both the underlying voice exchange and the previously mentioned reflexive structure of the basic idea. The <8, 10, 0> portion of the series is generated by chromatic motion, while the ordered pitch class interval 3 is comprised of diatonic pitch classes. The reflexive structure of the basic idea appears to motivate the sudden switch to diatonic motion, as the second element of the basic idea (the descending major second in a \downarrow .)

rhythm) is repeated in the first two beats of m. 32. The first three intervals in the series correspond to the harmonic succession $IV^6 - Aug_{x4}^{\#6} - i_4^6$. As mentioned in my discussion of wedge progressions in Part 1 of this paper, the <8, 10, 0> series is built into the model progressions in Example 291. So, the presence of the <8, 10, 0> interval series normalizes the second cello's G# in m. 31.4, which enacts the modal mixture and prevents complete voice exchange between both E4 and G4. This chromatic wedge interpretation also further justifies the IV^6 preparation of the Aug_{x4}, since its substitution for the expected ii_3⁴ does not disrupt the a second interval series. Additionally, it helps to justify the resolution of the Aug_{x4}^{\#6} to a minor a second cello is for the formula formula for the formula for the formula formula for the formula for the formula for the formula formula for the formula formula for the formula for the formula for the formula formula formula for the formula formula for the formula formula formula for the formula formula formula formula for the formula formula formula formula for the formula formula for the formula formula formula formula for the formula formula formula formula for the formula for the formula f

tonic: that progression is built into Gauldin's Even-Interval Model chromatic wedge segments, including the five-chord omnibus model that Zajaczkowski identifies.

Although Tchaikovsky's theory affords a unique interpretation of the passage, involving a local F# major tonic, the validity of that interpretation hinges on designating the E4 in the second cello at m. 32.2 as a non-harmonic tone. Given that the E4 is essential for the completion of the underlying voice exchange process, this progression is better described using methods that do not dismiss it as embellishment. The B minor interpretation both accounts for the E4 and aligns better with Tchaikovsky's theories, compared to the F# major interpretation. All of its deviations are justified by voice leading and motivic structure, whereas only most of the unexpected elements can be explained in this way when interpreted in F# major. Additionally, #6 the enharmonic $\operatorname{Aug}_{x4}^{#6}$ interpretation helps links this passage to the second section.

This later portion of the passage uses the same techniques of fragmentation, repetition, and transposition of motives and wedge progressions, generating momentum towards the local climax in m. 38. It intensifies the first section by repeating, with transposition, several <8, 10, 0> fragments of the previously established <8, 10, 0, 3> series at a much quicker harmonic rhythm (every half-bar instead of once every two bars). This saturates the music with chromatic wedge segments and, consequently, augmented sixth chords. Each four-beat module continues the previously established T₃ transposition pattern. These features of the second section are summarized in music notation in Figure 4.6 and as a series of wedge progressions with figured bass interpretation in Figure 4.7.



Figure 4.6: Reduction of mm. 34.4 - 37.1. Bracketing above the staff shows transposed repetitions of the basic idea with rests omitted, blue boxes show modular division of the basic idea, red highlight shows locations of augmented sixth chords, and grey highlight shows wedge progressions.

				T_3										
8	10	0	8	10	0	8	10	0	8	10	0	8	10	0
F	G	A♭	F B♭	A♭ F	A♭	G#	A#	В	G#	B G#	В	В	C#	D
B♭	В	С	B⊳	В	С	C#	Cx	D#	C#	Cx	D#	Ε	E	F#
F	F	F	F	F	F	G#	G#	G#	G#	G#	G#	В	В	В
D	Dþ	С	D	Dþ	С	E#	Е	D#	E	Е	D#	G#	G	F#
6	Aug#6	6	6	Aug #6	6	6	Aug#6	6	6	Aug #6	6	6	Aug#6	6
3	#4	4	3	x4	4	3	#4	4	3	x4	4	3	#4	4
	3			3			3			3			3	

Figure 4.7: Chromatic wedge segment analysis of mm. 34.4 - 37.1. Bolded pitch class names indicate those participating in the diverging wedge. Heavily bolded vertical lines separate four-beat modules and slightly bolded vertical lines separate <8, 10, 0> repetitions

As Figure 4.7 shows, the augmented sixth chords in mm. 35.2 and 36.2 are the now

familiar enharmonic Aug₃^{#6} chords, which appeared in the previous section of this passage. However, the harmonies at mm. 34.4, 35.4, and 36.4 belong to a type of chord not discussed by Tchaikovsky. Taking the chord in m. 34.4 as a model, it is spelled as an Aug₃⁴ of C major but resolves to an F minor 6/4 triad with the dissonant interval expanding to the chordal fifth. This is typical behaviour of an Aug₃⁴⁶, not an Aug₃⁴ chord. Therefore, it is more logical to interpret this harmony as a relative of the Aug₃⁴⁶ in F minor instead. As indicated by the figured bass in Figure 4.7, this augmented sixth chord replaces the characteristic doubly augmented fourth above the bass in the Aug₃⁴⁶ with a singly augmented one, resulting in the figured bass label Aug₄⁴⁶. The a reason for this is purely motivic: the augmented sixth chord in m. 34.4 would be an Aug₃⁴⁶ if the a melodic note in the second half of the beat were G# instead of G\. However, placing a G# in this location would completely change the melody of the basic idea to which this developmental passage is referring. This applies to all parallel locations (mm. 35.4 and 36.4) under transposition. These Aug#4 chords are thus a direct consequence of strict adherence to the $\frac{1}{3}$ underlying voice leading pattern (the divergent <8, 10, 0> chromatic wedge) and to the developmental strategies of fragmented, transposed transposition of the basic idea.

From this analysis it is apparent that this passage is firmly, albeit abstractly, aligned with Tchaikovsky's manual: the composer prioritizes the melodic dimension and correct voice leading, stating that any rules he presents in his book may be justifiably broken for the sake of these two elements ($\S138$). Accordingly, we may regard the chords that are absent from the manual examples to arise contrapuntally as logical extensions of the given examples and their prescribed behaviours. This chord and its interpretation as a modification of an already established type of augmented sixth chord also partially aligns with Harrison's (1995) proposed extension to the modern theory of augmented sixth chords. That is, the identity and "power" of augmented sixth chords comes from the interval itself, leaving room for flexibility in the rest of the chord's pitch class content (Harrison, 1995: 184-5). While, as mentioned in Chapter 2, Tchaikovsky's perspective does not account entirely for this viewpoint, the composer's focus on voice leading, as well as his attention to the spelling, voicing, and resolution of the augmented sixth interval supply some overlap. The intersection of these approaches further supports the notion that the Aug#4 with a singly augmented fourth maintains its augmented sixth chord $\frac{3}{3}$

identity despite containing an unexpected pitch class.

In the next passage I will analyze, the concluding portion of the Andante exposition (refer to Figure 4.8), the augmented sixth chords also contribute foreground embellishment and

harmonic colouration through chromatic neighbour motion. However, these chords also play more structural roles by prolonging a tonic and contributing to the articulation of the brief excerpt's formal function. This passage illustrates what Zajaczkowski identifies as one of Tchaikovsky's most common harmonic techniques for linking formal sections together: harmonic prolongation via alternation that creates the impression of stasis (Zajaczkowski, 1987:

6). These two and a half measures are characterized by alternation between the enharmonic #6
Augx4 of D and root position D major tonic. This alternation links the end of the briefly

3

intervening Moderato section to the final dénouement of the Andante exposition, which features a solo clarinet recapitulation of the beginning of the first Andante theme.


Figure 4.8: mm. 142 – 155 with motivic structural and harmonic annotations. The recapitulation of the Adagio theme begins in in m. 154. Pr. = Presentation; Ctn. = Continuation.

Although the voice leading is smooth as expected, the augmented sixth chord displays behaviours typical of both the $\operatorname{Aug}_{x4}^{#6}$ and the $\operatorname{Aug}_{5}^{6}$. First the augmented sixth interval expands to the doubled fifth of the resolving tonic, which immediately identifies it as an $\operatorname{Aug}_{x4}^{#6}$. However, it is prepared and resolved by the tonic in root position, which is more characteristic of the $\operatorname{Aug}_{5}^{6}$: the model resolution of $\operatorname{Aug}_{x4}^{#6}$ is to a tonic ${}_{4}^{6}$ and Tchaikovsky's examples demonstrate preparation of the $\operatorname{Aug}_{x4}^{#6}$ by its origin instead of the tonic. This blend of characteristic behaviours highlights the enharmonic relationship between the two augmented sixth chord types and calls attention to the motivic voice leading process that generates the chord in this context: chromatic neighbour motion over a tonic pedal. The voice leading pattern re-uses the J. $\stackrel{\circ}{}$ motive

from the continuation sections of the prolongation's corresponding phrase pair. This seamlessly integrates the augmented sixth chords into the motivic structure of the passage, unifying their foreground embellishment and mid-level, structurally significant roles. The musical context is thus crucial to fully understanding the multiple roles of these chords in this passage.

The next two examples demonstrate how augmented sixth chords can be built into motives such that their presence is expected in parallel locations. In each case, Tchaikovsky plays with the dynamic expectations (Huron, 2006) created by the presence of these chords, either thwarting the expectation entirely or capitalizing on enharmonic equivalence for it to be only retroactively fulfilled. These evasions of varying intensity further illustrate the role and potential of augmented sixth chords as contributing to musical development, and their integration into their respective motivic contexts illustrate how these chords can also operate at a deeper level than foreground colouration.

First, measure 58 (refer to Figure 4.9) marks the end of the local development of the #6 second theme in the Allegro group. It introduces an Augx4 - i (G# minor) progression to conclude the development before the transposed re-statement and development pair of this #6 second Allegro theme. The Augx⁴ is built directly into the final iteration of the characteristic $<\hat{6}$ $-\#\hat{4}-\hat{5}$ motive²⁸ that occurs in the winds, in dialogue with the $<\hat{3}-\hat{4}-\hat{2}>$ motive of the same #6 contour in the brass. The placement of the Augx4 chord at the end of this local development passage highlights a trend first identified in mm. 29.4 - 36.4: the placement of augmented sixth chords near the end of a development section, resulting in increased momentum and tension through chromaticism and harmonic contrast (refer to Figure 4.5 – Figure 4.7 and their associated discussion above). Considering this tendency in this context, it is reasonable to expect another augmented sixth chord to appear in a parallel location within the second local development of this theme's transposed restatement (i.e., in m. 66). The chord that arrives in m. 66 only fulfills this expectation retroactively, after its resolution. It is spelled as a V⁷ of E major but resolves as its enharmonic equivalent: the Aug_{x4} of D# (refer to Figure 4.10).

²⁸ These are local scale degrees that are relative to each new tonic under transposition. This also applies to the brass motive that follows.



Figure 4.9: Reduction of mm. 57 - 58 with annotations showing that the augmented sixth chord is built into the $<\hat{6}$, # $\hat{4}$, $\hat{5}>$ motive (blue note heads). Pitches of the augmented sixth interval are coloured red.



Figure 4.10: Reduction of mm. 65-66 showing enharmonic spelling of expected augmented sixth chord in the parallel motivic position in D# minor.

Next, we examine the very first augmented sixth chord in the movement. It occurs in the slow introduction, as part of the cadential idea (m. 4) of the first phrase in the opening phrase pair (refer to Figure 4.11). The chord concludes a very soft, slow, ascending bassoon melody and is articulated by the viola at a suddenly louder *mf* dynamic that crescendos into the cadence with a 6-5 suspension in m. 5. This augmented sixth chord is a completely usual Aug_5^6 that resolves directly to the local B⁷ tonic in root position (V⁷ in the previously established E minor). It is prepared by its diatonic origin following an E minor $\frac{6}{4}$ chord at the beginning of m. 4. At the resolution, the voice leading avoids illegal consecutive fifths without any of the prescribed resolution patterns on account of the added seventh at the resolution and the 6-5 suspension

above the bass. This progression is also another example of the modulatory digression concept, without a prolonged cadence to confirm any kind of modulation into the dominant.

After a few beats of silence, the bassoon melody begins again at the same pitch level. This generates the expectation for Aug_5^6 tonicized half cadence in the parallel location of mm. 10-11. Instead, the A# that is expected to create the augmented sixth with the C4 in the bass remains an A4 in m. 10 and the phrase moves to B minor in preparation for the cadence, resulting in a B minor $\langle V^7/VI - VI \rangle$ progression in place of the expected \langle diatonic origin $-\operatorname{Aug}_5^6\rangle$ before the half cadence in the new key. The sudden saturation of the end of the melody with major sonorities completely transforms the second phrase, contrasting it greatly with the first. Somewhat anomalously, the augmented sixth chord is not the active agent at the moment of harmonic contrast. However, its role in generating the expected parallelism means that it is still abstractly responsible for the development of the melody in the second phrase. Above all, this augmented sixth chord sets the stage for the saturation of augmented sixth chords that occur throughout this movement, previewing how they are used throughout the piece to generate (and motivate) contrast and momentum.



Figure 4.11: mm. 1 - 12 of the first movement, showing the unrealized parallelism between mm. 4 and 10.

Measures 105-6 provide another instance of an augmented sixth chord operating at the middleground, contributing development and momentum. Figure 4.12 presents the whole phrase from mm. 101 - 108 with annotations that outline the motivic structure and identify the location of the Aug⁴₃. In this case, its harmonic contrast collides with formal functionality, articulating a mid-level structural division in the second (*Moderato mosso*) melody of the *Adagio* theme group. While the passage resides firmly in D major, the Aug⁴₃ and its associated dominant seventh chord in m. 105 enact a brief tonicization of B minor (vi) as they resolve into m. 106. The progression

 $Aug_3^4 - V_3^4$ in B minor is achieved through only one semitone of voice leading displacement (the C\\$ bass of the Aug4/3 is raised to C\\$), which clearly demonstrates the close relationship Tchaikovsky asserts between the Aug4/3 and its diatonic origin chord.



Figure 4.12: mm. 101 - 108 with annotations. The first phrase of the second melody in the Adagio theme group. Red highlight indicates the location of the Aug_3^4 chord.

However, the order in which these chords appear is opposite to what Tchaikovsky suggests: he recommends that the origin chords precede the augmented sixth to prepare all of the

dissonant tones and there is no commentary in the manual on these chords appearing in the reverse order. Despite the inconsistency, smooth voice leading obtains between the B minor Aug_3^4 and its D major V⁶ preparation in m. 104. The cello and bass move from C# to C \ddagger in contrary, semitonal motion to the first violin, which shifts from A \ddagger to A#, while the second violin maintains the common tone E. The A# local leading tone is then carried into the dominant seventh chord in m. 105 by the ascending B melodic minor line in the trombones, while the C \ddagger returns to C# in the low strings on beat three.

At first glance, a foreground interpretation of the Aug_3^4 as a chord that contributes chromatic colouration is plausible. However, the interaction between the Aug_3^4 and the motivic structure of its associated theme, the chord's metric and rhythmic emphasis, and a parallel recurrence eight measures later all suggest that the chord plays an integral role in articulating the grouping structure of this phrase. First, this chord is aurally emphasized by duration and metric stress, occurring on the downbeat of m. 105 and lasting for half of one bar. The figuration of the bass of the chord is a written-out trill, emphasizing the C natural's constituency in the augmented sixth interval and matching the harmonic tension with increased rhythmic activity.

This Aug_3^4 chord also appears at a point of melodic contrast and a registral peak. The entire phrase (mm. 101 – 108 inclusive) has a presentation + consequent hybrid structure. Its presentation consists of a two-bar basic idea, immediately repeated under transposition a perfect fifth above. The consequent includes contrasting melodic material, closing with a tonicized half cadence in D major in m. 108, whose root (A) is then recontextualized to become the tonal focus of the following phrase. The melodic characteristics of each phrase segment contrast greatly: the presentation features a rhythmically active, angular melody with mostly stepwise and

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arpeggiated motives passed imitatively between the flute and bassoon, while the consequent features a steadily ascending scale in the brass, ascending stepwise flourishes in the clarinets, and a descending stepwise melodic sequence in sustained rhythmic durations in the upper winds. The whole phrase is accompanied by a march-like [JTJJJJ] rhythmic ostinato in the violins

and viola, which unifies the melodically dissimilar segments. The Aug_3^4 occurs at the beginning of the consequent phrase before the new melodic material begins, further emphasizing motivic contrast by introducing a layer of harmonic contrast as well.

The progression of $<\operatorname{Aug}_3^4 - \operatorname{V}_3^4$ – local tonic in root position> also occurs 8 measures later (mm. 113-114) in F# minor as part of a transposed repetition of this phrase. Although the harmony that precedes the Aug_3^4 differs in m. 112, the Aug_3^4 retains the characteristics outlined above in this parallel context: it maintains its duration as well as its metric stress and phrase structural location in m. 113, with the same voice leading and rhythmic realization as in m. 105. This parallelism confirms that the Aug_3^4 is functioning motivically to mark the grouping structure of the melody, rather than contributing only to the foreground level. The motivic integration of the chord and its contribution to the articulation of the phrase structure justifies the unexpected order in which these chords occur. Its occurrence in the second portion of the phrase reinforces its developmental and continuation functional roles.

Finally, the passage in mm. 299 - 304 (Figure 4.13) exemplifies the contributions of an Aug_5^6 to the articulation of the large-scale formal organization of the piece, concluding the main development prior to the recapitulation of the first *Andante* theme that begins in m. 305. It provides harmonic contrast and a brief tonicization of the structural half cadence in B minor at

the very end of the standing-on-the-dominant section of the development, intensifying the momentum towards the formal boundary after an extended descending sequence in the low brass.



Figure 4.13: mm. 295 - 304 with annotations. Blue lines indicate voice leading and orchestration of the diminished 3^{rd} and 10^{th} resolution, as well as the orchestration of the diminished third.

This excerpt interacts with two theoretical concepts that occur towards the end of the 27^{th} chapter of the *Guide*: the modulatory digression and inverted augmented sixth chords. The augmented sixth chord in mm. 299-300 is spelled as an Aug₅⁶ of F# major that resolves after a

brief pause to the F# major triad that articulates the B minor half cadence. The constituent pitch classes of the augmented sixth interval are E# and G, #4 and (already flattened) $\hat{6}$ in B minor, respectively. All of these characteristics—the pitch class ingredients and scale degrees, chord type, and resolving triad—clearly exemplify the modulatory digression concept.

However, the augmented sixth chord is inverted, with the characteristic interval orchestrated as both a diminished third and tenth. Comparing this example to Tchaikovsky's pedagogy, it is possible to connect the voice leading of mm. 299 – 304 to Example 294 (§106, Figure 4.14), which models inverted augmented sixth chord and their inverted origins, by momentarily ignoring the diminished third in favour of the diminished tenth and the F# pedal in the contrabass. This results in a voice leading progression that resembles m. 4 in Tchaikovsky's Example 294 (§106), which illustrates resolution of the dissonant chord to a tonic 6/4. Notably, the characteristic interval in Example 294 is voiced as an augmented sixth instead of the diminished third/tenth that occurs in the symphonic example. Despite this discrepancy in voicing, both chord successions follow the same voice leading pattern, described here in scale degrees relative to the resolving tonic: $\hat{7} - \hat{1}, \hat{2} - \hat{1}, \text{ and } \hat{4} - \hat{3}$, as well as an identical $\hat{6} - \hat{5}$ bass line (pedal tone notwithstanding) in both examples. Figure 4.15 gives a short score of the progression, facilitating comparison with Example 294 (§106).



Figure 4.14: Example 294 (§106) from Tchaikovsky's manual, illustrating resolutions of inverted origin chords (mm. 1-4, 6) and inverted augmented sixth chords (mm. 5, 7).



Figure 4.15: A single-staff reduction of the voicing and voice leading of mm. 299 – 304 omitting the diminished third and F# pedal. Red notes indicate the diminished tenth and its resolution.

This resemblance suggests that the chromatic chord in mm. 299-300 would actually be better described as an inverted origin chord instead of an inverted augmented sixth. Indeed, measure 4 of example 294 is analyzed as an inverted origin chord in the corresponding discussion of Figure 2.7. Recall from Chapter 2 that inverted origin chords and inverted augmented sixths are primarily differentiated based on voice leading and the inversion of the chord to which they resolve. With the exception of the Aug^{#6}/₃, which may resolve to a $\frac{6}{4}$ chord if the dissonant interval leads to the fifth chord factor, augmented sixth chords (inverted or not) always resolve to root position tonic (§98, §103, §104). Figure 4.15 shows the chord in mm. 299 – 300 resolving to a 6/4 triad and the dissonant interval converges on its root instead of its fifth. These two factors to do not express typical, nor correct behaviours of augmented sixth chords

and conform more closely to the corresponding prescribed diatonic resolution pattern. Therefore, the chord's identity as an augmented sixth is severely undermined and it is better understood as an inverted origin chord with a diminished tenth.

Although this provides a relatively clean explanation for the inverted chromatic chord, it does not account for all of the elements in the progression: the omitted diminished third and the F# pedal are both crucial to the motivic and formal structure of the piece and thus cannot be simply glossed over. The progression's resemblance to measure 4 of Example 294 in realization and voice leading is a consequence of both goal-directed motion in the preceding sequential passage and of Tchaikovsky's prioritization of smooth voice leading at the augmented sixth chord's resolution.

First, since the F# pedal is a chord tone in mm. 301-304 and plays an integral role in articulating the structural half cadence that marks the end of this large formal section, it makes sense to include it in the analysis of the F# major triad. Accounting for the pedal tone necessitates a root position interpretation, as its contrabass orchestration makes it the lowest sounding pitch in the passage. Since the chord in mm. 299-300 is now understood to be resolving to a root position major triad, it can be categorized as an inverted augmented sixth chord. Thus, although dissonant in mm. 299-300, the F# pedal tone allows the inverted Aug⁶₅ to retain its augmented-sixth-chord identity.

While the lack of the characteristic Aug_5^6 voice leading patterns—outlined in Examples 286-288 (§101, Figures 2.3, 2.5, and 2.6 in Chapter 2)—could be said to call into question the chord's Aug_5^6 classification, the voicing of the G\\$ above the D\\$ erases the danger of parallel fifths. This negates the need for these idiomatic voice leading progressions in the correct resolution of the inverted Aug_5^6 . That these expected voice leading patterns are not required in

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this context for an (inverted) Aug_5^6 classification is further supported by comparison of this voicing to measure 5 in Example 294, which also features $\flat 2$ voiced above $\flat 6$ and can still be correctly understood as an inverted $\operatorname{Aug}_5^{6,29}$

The supposedly illegal diminished third in mm. 299-300 is justified both by the goaldirected motion of the $[\downarrow ... \land \downarrow]$ melodic sequence in the low brass in mm. 296-298,³⁰ as well as

the form-functional contributions of the chord and the characteristic dissonant interval to the phrase. Beginning in measure 284, a descending sequence built on motivic dialogue between the strings, winds, and upper brass in one layer and the low brass in the other propels the music towards the inverted Aug_5^6 chord and half cadence in mm. 299-304. As the sequence progresses, the strings, winds, and upper brass fall away to expose the low brass motive in the bass trombone and tuba for the final three measures prior to the inverted Aug_5^6 . Each module at the end of the melodic sequence features a descending semitone and each module is transposed down by a diatonic third in B minor. Following this logic, the first note of the module that would begin in m. 299 if the sequence had continued would be an E\[a]. Instead, the sequential process is modified such that the E\[a] is produced by a diminished third transposition in place of the expected diatonic interval. The sudden chromatic change lends the E\[a] a goal-like quality and saturates the music with the diminished third interval at this location, realizing it both in the melodic dimension at the end of the sequence and as the characterizing sonority of mm. 299-300.

²⁹ Refer to the discussion of Figure 2.7 for more details.

³⁰ This brief two-measure sequence concludes the much longer descending low brass sequence that features similar melodic material beginning in m. 285. This longer sequence has a two-bar module and a different interval of transposition (than in mm. 296-298.

Many additional elements reinforce the goal-like quality of the E# and the inverted Aug_5^6 as a whole. Notably, the E# is not immediately resolved, nor do the resolutions of the chromatic pitch class occur in the bass trombone and tuba. Instead, the entire orchestra rests except for the F# pedal in the timpani and contrabass, calling aural attention to the inverted augmented sixth chord. Additionally, the resolutions of the chromatic E# are transferred to horns and cellos (which had previously been played G\u00e4), as well as the timpani (which is continuing the F# pedal tone). This change in orchestration highlights the E# as the end of the low brass motivic sequence that begins back in m. 285 (refer to footnote 6). Moreover, the inverted Aug_5^6 is initially articulated at an *ffff* dynamic level and is sustained over two measures through a diminuendo to *p*, a heavy emphasis that is suggestive of its significance to the development section.

Although these factors suggest that the inverted Aug_5^6 is functioning as the closing element of a motivic process, the ability for the chord to stand as an independent, large-scale conclusion is challenged by its dissonance, which demands resolution. The inverted augmented sixth chord thus resolves in m. 301 to a more conventional marker of the end of a development section, the dominant triad. Its resolution also confirms the role of the F# pedal that persists throughout this passage. The lowest pitches of the inverted Aug_5^6 are extremely dissonant, forming a chromatic trichord with E#, F#, and G\u00e4 in the low brass, timpani, and cello, respectively. However, the necessitated resolution by the root position F# major triad in mm. 301-304 is significantly de-emphasized by comparison. It is articulated by a thinned orchestral texture at a lower (ff) dynamic level. This reduced emphasis not only confirms the concluding function of the dominant chord but portrays it as something of a (necessary) harmonic afterthought, subordinating it to the inverted Aug_5^6 in mm. 299-300 despite its form functional significance.

Therefore, although we harmonically understand and describe the inverted Aug_5^6 relative to its resolving local tonic, it arises contrapuntally as a result of the motivic sequence in the low brass. The motivic significance and integration of the inverted Aug_5^6 's crucial E# pitch class lend the entire chord motivic and formal function. It is thus simultaneously ending one process (the sequence) and propelling towards the next (tonicizing the following dominant triad). Although the F# major triad is the main actor in the articulation of the formal boundary, its formal functionality is compounded by the preceding inverted augmented sixth chord. The augmented sixth chord is thus pivoting between mid-level and large-scale processes, making it integral to the articulation of the structural boundary.

The examples treated above confirm and extend the results presented in Chapter 3. Taking into account musical context demonstrates that individual augmented sixth chords in this movement contribute to developmental processes across levels of structure and are closely integrated with the motivic and formal design. Moreover, these chords have flexible realizations and deviations from the expected behaviours are justified by adherence to motivic voice leading patterns or other logics in the melodic/motivic dimension, such as a sequence. These features and our corresponding appreciation of the versatility of augmented sixth chords are magnified when observed in close proximity. Two such passages are explored below.

4.2.2 – Multiple Augmented Sixth Chords Within Development Passages

The first passage of focus opens the large-scale development, spanning the whole precore segment in mm. 161-170. In this excerpt, augmented sixth chords of various types are used first as foreground elaborations of a middle ground melodic structure and then to enact a modulation. Their multiple roles throughout the pre-core intensify its large-scale developmental function prior to the expected developmental procedures of fragmentation and sequential treatment in the core, which begins in m. 171. Figure 4.16 shows the composer's four-hand-piano reduction of the excerpt, and Figure 4.17 shows a Schenkerian-style, detailed middleground reduction of the passage that highlights its melodic structure.



Figure 4.16: mm. 161 - 170 from Tchaikovsky's piano four-hand reduction of the symphony



Figure 4.17: Detailed middleground reduction of mm. 161 - 170, showing the melodic structure of the passage. Arrows indicate locations of the Augmented sixth chords. "A" and "B" designations between the staves indicate motivic segments and "Inv." denotes contour inversion.

Figure 4.17 shows that in mm. 161 - 168, each Eb and Eb are prolonged by two brief angular motives that are contour inversions of one another. Eb is first prolonged by Motive A that features chromatic stepwise motion and a <+, +, -, -> contour series, and then by Motive B, which is characterized by brief octatonic motion (alternation of tones and semitones relative to the melodic pitch being prolonged) with a <-, -, +, +> contour series. Eb is prolonged by a retrograde inversion of these motives transposed a semitone higher: the contour inversion of T₁ B followed by that of T₁ A. This transformational relationship varies the metric placement and type of the augmented sixth chords in each melodic prolongation.

The first two augmented sixth chords elaborate whole-tone neighbour motion between Eb and Fh through chromatic passing motion. The soprano and tenor voices move consistently in contrary motion that results in overlapping wedges, first diverging and then converging. This creates the palindromic wedge interval series <8, 10, 0, 10, $8>^{31}$ and a correspondingly palindromic harmonic succession. Measure 161 is summarized in Figure 4.18.

³¹ Recall that the augmented sixth chords correspond to ordered pitch class interval 10 in these wedge segments (Gauldin, 2004: 3).



Figure 4.18: Reduction of measure 161, showing Aug4/3 chords (highlighted red) embellishing whole-tone neighbour motion between E^J and F^k with chromatic passing motion, including the corresponding palindromic wedge interval series.

The palindromic structure creates local deviations from Tchaikovsky's pedagogy. A closer look at the progression in m. 161 shows that the augmented sixth chords are elaborating an A^{07} chord over a C pedal. Both augmented sixth chords are Aug_3^4 of F major. Although the <8, 10, 0> segment of the palindromic series is familiar, the harmony that corresponds with the interval 8 (A^{07}) is not any of the preparatory chords suggested by the composer (§99).³² Moreover, the <10, 8> succession indicates that the second augmented sixth chord does not resolve to tonic. Whereas Tchaikovsky prescribes the outward resolution of the augmented sixth interval to an octave comprised of the tonic note (§99, §100, §101), this second augmented sixth instead converges to a minor sixth.

These local abnormalities are entirely justified by the foreground, elaborative role of the Aug_3^4 chords. Since these augmented sixth chords arise contrapuntally and are the consequence of motivic voice leading, they are not treated in the ways Tchaikovsky suggests. The underlying motivic process takes precedence, and the voice leading remains characteristically smooth, albeit

³² The suggested chords are (1) the tonic in the same position to which the augmented sixth chord resolves, (2) the origin chord (which is V_3^4 for the Aug₃⁴), and (3) chord ii or IV (§99).

abnormal in the second half of the progression. Taking the middleground structure of the melody into account, these augmented sixth chords are thus expressing continuation formal function at the very local scale, contributing to the contrapuntal development of the structural melodic tones at the beginning of this larger-scale development section.

The same developmental role can be ascribed to the third augmented sixth chord, which occurs in m. 166.2 (illustrated in Figure 4.19). This chord, an inverted enharmonic $\operatorname{Aug}_{x4}^{\#6}$ of B major $_{3}^{\#6}$ whose diminished tenth interval converges on the doubled dominant (F#), is the central axis of the palindrome that characterizes the inverted T₁B motive. It is generated by octatonic melodic motion over a B\ pedal tone with chromatic motion in the inner voices and its preparation, construction, and resolution appear entirely in accordance with the expectations set by Tchaikovsky's manual.



Figure 4.19: reduction of m. 166, showing the inverted $\operatorname{Aug}_{x4}^{\#6}$ of B major (highlighted red) as the turning 3 point/central axis of the palindrome.

Although both instances of augmented sixth chords are clearly foreground embellishments that make similar developmental contributions to their respective progressions, their metric positions, alignment with Tchaikovsky's rules, and expressive functions within their motives vary. The resultant Aug_3^4 chords in m. 161 are in very weak metric positions, contributing harmonic colouration to the brief progression without necessarily articulating structural points of the palindrome (i.e., the start and end or the turning point/central axis). Consequently, their deviations from Tchaikovsky's recommendations are both justified and aurally masked by the motivic voice leading pattern. However, the non-discrepant, inverted,

enharmonic $\operatorname{Aug}_{x4}^{\#6}$ contributes to the articulation of the structure of the palindrome by providing 3

harmonic contrast at the turning point of the pattern. Its location draws attention to its dissonance and thus to its correct resolution as the music passes back down to the E. The close proximity of these chords encourages comparison and retroactive functional recontextualization, highlighting their contrasting contributions to two similar motives.

The final augmented sixth chord in mm. 161 - 170 enacts a modulation to D minor with #6 an enharmonic Augx4 in a progression that greatly resembles Example 291 (§104, see Figure

4.4). However, unlike the examples of modulation via Aug^{#6}₃ in Chapter 3, this augmented sixth chord is not part of the pivot in an enharmonic modulation. In measure 169, the pedal tone in the cello, contrabass, and bassoons descends again by semitone to Bb, while the melodic pattern continues to ascend by step, landing on F natural in the upper winds and strings. The enharmonic Aug^{#6}₃ is then properly prepared by the diatonic supertonic $\frac{4}{3}$ chord of D minor. It resolves to a D minor $\frac{6}{4}$ triad, immediately launching into a fragmented development of the first basic idea from the Allegro theme group. This progression is illustrated at the end of the reduction in Figure 4.19. tonic $\frac{6}{4}$) in Example 291 (§104) can be considered complete without progressing to a prolonged cadence of the first class. While Tchaikovsky's rules do not allow the interpretation of the Aug_{x4} $\frac{#6}{3}$ - i_4^6 resolution as a true cadence,³³ this progression shares harmonic, rhetorical, and form-functional features that have come to be associated with authentic cadences in tonal music. For instance, the Aug_{x4} and its resolution in m. 170.3 conclude the pre-core segment of this development section. It also strongly suggests the key of D minor through the expansion of the two chords prior to the core of the development (beginning m. 170.4), which begins its processes of fragmentation and sequencing in D minor. The resolution of the Aug_{x4} is thus articulating a mid-level structural boundary, a common feature of cadences.

In summary, this passage features two different types of augmented sixth chords relative to three different tonics that appear in varied contexts and roles, unified by contributions to the destabilization of the previously established tonic. As the pre-core develops, the structural level at which each augmented sixth chord gradually moves from foreground contrapuntal colouration to the deep middleground level. The Aug_3^4 chords contribute foreground linear elaboration and

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harmonic colouration. The first Augx4 also participates in the linear elaboration process but $\frac{3}{3}$

This modulation supports the conjecture in Chapter 2 that the progressions (i.e., $Aug_{x4} - 3$

³³ Tchaikovsky requires the presence of a root position $V^{(7)} - I$ for cadences of all types (including the prolonged types), except in half and deceptive cadences. There is also no leading tone to D minor in this chord, which makes a proper cadence designation tenuous.

brings a more structural contribution by marking the turning point/central axis in the

characteristic palindrome motive. Finally, the last $\operatorname{Aug}_{x4}^{\#6}$ chord participates in a modulation to D minor and articulates the mid-level formal boundary between the pre-core and core subsections of this development section. That each of these three chords of contrasting scope occur in such close proximity to one another further demonstrates the range of contexts in which they can be effectively used.

The final passage of focus in this chapter (mm. 73 - 88, covered by Figures 4.20-4.22) constitutes the last local development of the *Allegro* exposition, as well as the section's dénouement. The contributions of the various augmented sixth chords range from surface-level linear embellishment with motivic integration to achieving a structural modulation at the end of the section.

To begin, measures 73-75 contribute to the development of the second group of melodies in the first thematic block (the Allegro) through the integration of augmented sixth chords in mm. 74.3 and 75.1 (Figure 4.20) into the developmental processes of this passage. These three measures extend the local climax that begins in measure 70.3 and facilitate the transition into the dénouement (mm. 76.3 – 88) of the Allegro section as a whole. They feature hastened harmonic rhythm, tonal destabilization, and motivic fragmentation, juxtaposed in the orchestration as blocks of sound, techniques used frequently by Tchaikovsky in developmental passages (Zajaczkowski, 1987: 26, 60).

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Figure 4.20: Reduction with Roman numeral annotations of augmented sixth chords in mm. 74 and 75.2. Double slashes denote an interrupted resolution in E major.

Further contributing to the sense of destabilization is the tension between two possible focal pitches, afforded by the orchestration of the motivic design and the two augmented sixth chords. The orchestration is split into two motivic groups, one that emphasizes E and the other emphasizing A. The preceding development of Allegro Theme 2 (mm. 62.3 - 72) features a motive that leaps between the Neapolitan note and leading tone to E, before resolving up by step to E μ . This is continued into mm. 73 and 74 by the oboes and trumpets. E is further emphasized by sustained octaves in the low strings, low brass, timpani, and bassoon, with upper F μ neighbours interspersed. Simultaneously, the upper strings and winds play the second developmental motif, which is saturated with the minor third interval of A – C μ and repetition of A. Each of these two motives (in addition to the sustained bass notes) is also rhythmically distinct—the E motive features eighth notes, while the A motive features sixteenths—reinforcing the competition between the two possible focal pitches in the rhythmic dimension. This motivic and orchestral separation is illustrated in Figure 4.21.



Figure 4.21: Symphony No. 6, movement 1, mm. 73 – 76, with annotations that show the orchestration of motives that emphasize E and A tonics in blue and green highlight, respectively. Red highlight indicates locations of augmented sixth chords.

This tension culminates in the arrival of the augmented sixth chord in m. 74.3, when the D# and Fand Fand of the E motive occur simultaneously as an augmented sixth. The A motive continues throughout mm. 74 and 75, while the augmented sixth is absorbed into the sustained chordal texture in the lower voices, maximizing rhythmic contrast and drawing attention to the dissonant quality of the chord. The augmented sixth chord resolves to an A minor $\frac{6}{4}$ triad, with the

dissonant interval expanding to octave Es. This chord and its resolution reinforce the tension between the two possible tonics of A and E, as the chord can be plausibly interpreted in each key. If this section is to be understood primarily in E, then it is an Aug_5^6 with an interrupted resolution. If this passage is instead understood primarily in A, then this chord should be read as an enharmonically spelled $\operatorname{Aug}_{x4}^{#6}$ resolving to second inversion tonic. In both interpretations, the 3 chords are correctly voice-led, but neither reflects all of Tchaikovsky's pedagogical principles. The following discussion compares the merits and challenges of each interpretation, contextualizing the chords within the motivic structure of the passage.

Interpreting this chord as an Aug_5^6 of an E tonic reflects several of Tchaikovsky's voice leading conventions. First, it is spelled using the pitch classes of the origin chord of the Aug_5^6 $(\operatorname{vii}^{b}_{0}^{b}_{4})$ in relation to an E tonic. In progressing to the A minor $\frac{6}{4}$ the resolutions of chord tones are temporally displaced by the suspension of the third and fifth above the bass, which allows the augmented sixth interval to resolve first. This directly corresponds with the second of Tchaikovsky's two suggested workarounds for resolving the Aug_5^6 to root position tonic (recall Example 287 in Chapter 2), which prescribes the intermediary $\frac{6}{4}$ triad as metrically unaccented and of minor quality—exactly the characteristics of the $\frac{6}{4}$ s in mm. 74.4 and 75.2. However, labelling the augmented sixth chord as an Aug_5^6 in E requires us to understand this example as an incomplete progression because the root position E major tonic, expected after the A minor $\frac{6}{4}$, never arrives. Reading it as a partial resolution is supported by the motivic and form functional context of this passage: the entire development is characterized by motivic fragmentation as a means of generating tension, momentum, and destabilization. Since these three measures serve to continue the development of the second Allegro theme, this fragmented progression can thus be understood to align with and perhaps even reinforce the motivic developmental technique that governs the passage.

Nevertheless, the prose and musical examples that describe the Aug_5^6 in Tchaikovsky's manual do not admit the possibility of incomplete progressions such as the one proposed above. Moreover, although a missing resolution would comport well with the fragmentation technique, the resolution appears to break the composer's first stated rule: that augmented sixth chords resolve to tonic. Heeding this rule leads to consideration of the A minor $\frac{6}{4}$ chord as tonic rather than an intermediary chord. This requires a reinterpretation of the preceding augmented sixth chord, especially given the composer's stipulation that resolutions to major tonics are much preferred for the first three types of augmented sixth chord (including the Aug_5^6).

Interpreting this progression as an Aug_{x4} resolving to an A minor tonic ${}^{6}_{4}$ also has several ${}^{3}_{3}$ merits. As previously mentioned, this label allows for Tchaikovsky's fundamental rule of resolving augmented sixth chords to tonic to be followed. Moreover, it aligns with the voice leading recommendations for resolving Aug_{x4} to a tonic ${}^{6}_{4}$, despite the enharmonic spelling: the augmented sixth interval expands to scale degree five in A minor, rather than to the tonic note.

However, a few questions remain regarding the completeness of the progression, in addition to why the composer opted for enharmonic spelling. As we considered in our discussion of the Augx4 in Chapter 2, Tchaikovsky identifies that a common context in which this chord 3 arises is by chromatic passing motion between a ii_3^4 and the I_4^6 in prolonged cadences of the first

class. This implies a metrically accented $\frac{6}{4}$ triad, a characteristic that the A minor $\frac{6}{4}$ triads in 74.4 and 75.2 lack. It is important to recall, though, that he does not restrict the Aug_{x4} to this context, noting only its frequency of use, which implies that the elements that lend the progression its prolonged cadence identity are not necessarily required for the progression to be considered complete. These include the V⁽⁷⁾ – I cadence expected to occur after the I_A^6 and the metrically accented position of the $\frac{6}{4}$ triad, an inversion that is usually restricted to unaccented positions unless prepared by suspensions (§47). Since the progressions in mm. 74 and 75 are clearly not cadential, the Augx4 $-I_4^6$ progression can be considered complete: interpreting the augmented sixth chords in 74.3 and 75.1 as Aug_{x4} means that the progression does not need to continue to an E major chord, regardless of whether it would be considered a tonic or dominant. The preparation of the Aug_{x4} must also be examined. Although separated by an eighth rest, the chord that immediately precedes the augmented sixth is another second inversion A minor triad. In §103, Tchaikovsky establishes that the $Aug_{x4}^{"}$ typically arises from chromatic voice leading. While the examples in his manual produce the augmented sixth chord from passing motion, this example features an Augx4 resulting from chromatic neighbour motion, maintaining the productive role of chromatic counterpoint in the generation of this chord (refer to Figure 4.1). The diatonic origin of the Aug₃^{#6} $\operatorname{Aug}_{3}^{*4}(\operatorname{ii}_{3}^{4})$ also occurs prior to the augmented sixth chord in the parallel location in the preceding measure (m. 73.3). This connection highlights the earlier

 ii_{3}^{4} as the indirect source of the Aug_{x4}^{#6} in m. 74, in addition to the chromatic neighbour motion that generates the chord locally. Thus, although it is not directly prepared by its origin, as is the case in Example 291 (refer to Figure 2.4), the Aug_{x4}^{#6} is still carefully approached and correctly resolved by the underlying chromatic voice leading process. The neighbour motion pattern is set up in m. 73, which features a bassline that moves between E and F ξ .

As for the enharmonic spelling, there are a few potential reasons for why the augmented sixth chord is spelled with a C natural instead of the expected B#. The first is both a notational and contrapuntal reason: C natural is a common tone to the A minor $\frac{6}{4}$ tonic and occurs frequently prior to the arrival of the augmented sixth chord. Spelling the C natural as a B# in the augmented sixth chord would create inconsistency and would be an awkward way to notate the tie that connects the common tones. The middleground structure of this excerpt considered in its larger context of mm. 70.3 – 82 supports this. As Figure 4.22 demonstrates, the C natural contributes to the larger-scale prolongation of A minor that pervades this passage.



Figure 4.22: Detailed middleground reduction of mm. 70.3 - 83 with Roman numeral annotations. Downward-facing brackets above the staff indicate that their enclosed material is repeated within the specified range of measures.

Although the spelling, voice leading, and concurrence with large-scale developmental fragmentation techniques are strong arguments for an Aug_5^6 of an E tonic interpretation, the enharmonic $\operatorname{Aug}_3^{\#6}$ interpretation aligns more closely with Tchaikovsky's pedagogical recommendations and is thus preferred. Additionally, labelling the augmented sixth chord as $\operatorname{Aug}_3^{\#6}$ does not necessarily remove the progression's parallelism with the overall motivic device 3 of this developmental passage: the open-ended nature of resolving to unstable second inversion tonic chords, in combination with the eighth rests that separate each A minor $\frac{6}{4}$ from its following $\operatorname{Aug}_3^{\#6}$ and the repetition of the brief progression create a similar fragmentary effect as the 3 incomplete progression provided by the Aug_5^6 interpretation. Despite its apparent internal "completeness", the $\operatorname{Aug}_{3,4}^{\#6} - i_4^6$ progression certainly does not contribute to a sense of closure to $\frac{3}{3}$

these few measures.

In all, the competing labels of this single chord reinforce the tonal destabilization and ambiguity that characterizes the development. The merits and challenges of each interpretation highlight the enharmonic relationship between the $\operatorname{Aug}_{x4}^{#6}$ and the $\operatorname{Aug}_{5}^{6}$ (of its dominant), which $\frac{3}{3}$ Tchaikovsky identifies in a footnote to §103. This example perhaps sets a precedent for the possibility of enharmonically reinterpreted augmented sixth chords: those that appear as one type but behave as the other. In this case, the chord is spelled like an $\operatorname{Aug}_{5}^{6}$ on the front end but

#6 resolves like an Aug_x4.

The next augmented sixth chords in this passage occur in mm. 75.3 – 78.2, shown in Figure 4.23. Motivically, they enact the transition from the extension and development of the local climax in the previous measures to the dénouement that begins in m. 78.3. Their transitional function is confirmed by their middleground significance (refer to Figure 4.22): They connect the A minor prolongation to the new key of D major by chromaticizing the stepwise descending bassline with E_{P} . This creates a gradual tonal shift to D major that is not confirmed until m. 82. The shift is generated by destabilization of the previous A minor tonic by saturating the music with the Aug⁴₃ and its diatonic origin, repeating fragmentary progressions of metrically accented major and minor dominant $\frac{4}{3}$ chords that move to unaccented Aug⁴₃ chords. The second half of measure 77 and the first half of measure 78 each contain a V_3^4 , while mm. 75.3 – 77.3 feature the minor dominant seventh in the same inversion. Each progression is a closed unit of fragmentation that concludes with an augmented sixth chord: instead of resolving as expected to root position tonic, the major or minor dominant chord returns after a single eighth rest. The destabilization and transitional effect of this passage is reinforced by the sixteenth-note motive that carries over from the previous theme and its development. Previously outlining A minor, this fragmented motive undergoes a parallel harmonic shift to A major—the dominant of the forthcoming D major tonic—by raising the characteristic C\ to C\. After two fragments, the motive is transposed down an octave, the orchestral texture thinning and the dynamic level lowering with each transposition.





Figure 4.23: Reduction of mm. 75 - 78.2 with harmonic annotations.

The relationship between the V_3^4 origin chord and the Aug_3^4 is most clearly demonstrated in the measures that feature the major dominant-seventh chord (mm. 77.3 – 78.2). As if lifted directly from his manual, each of the three common tones are tied together in the same voices, while scale degree two is lowered by one semitone at the arrival of the Aug_3⁴. The preceding four fragments continue the underlying theme of tonal competition in the previous passage: each Aug $_{3}^{4}$ is prepared with a minor dominant seventh chord in second inversion, featuring a lowered leading tone, which is immediately followed by the C# in the A major sixteenth-note motive and the Aug $_{3}^{4}$. At the start of the next fragment, the C# is again lowered to C\\$ in the minor dominant chord. A few questions remain. First, why not use the major dominant seventh to prepare the augmented sixth chords in the first four fragments, since the C# appears in both the melody and chordal accompaniment during the second half of each module? Next, what might motivate the switch to the major dominant seventh in mm. 77 and 78?

The alternation between C# and C\\$ created by the rapid juxtaposition of the v_3^4 with the Aug⁴₃ and A major sixteenth-note motive draws attention to the gradual modulation to D major and imparts a transitional nature to the first four fragments, connecting this passage to both its preceding and following material. The minor dominant seventh in measure 75.3 shares all but one pitch class with the preceding A minor $\frac{6}{4}$ triads, maintaining three common tones in the same voices. The bass line in the previous example was governed by semitonal neighbour motion between E and F natural within each fragment. In mm. 75.3 - 78.2, this bass motive has been transposed down a semitone to alternate between E and E flat. If the major dominant were to arrive at m. 75.3, it would reduce the number of common tones and create an abrupt harmonic contrast, disrupting the gradual, transitional nature of this passage, which is characterized by smooth connections. Moreover, this chord is simultaneously v_3^4 in D major and i_3^4 in A minor, as its construction and voice leading behaviour situate it plausibly in either key. This is evidenced by the minor chord quality, the absence of a leading tone in either key, the dominant-tonic relationship between A and D, and the unresolved chordal seventh that is tied into the following

 $\operatorname{Aug}_{3}^{4}$. This flexibility facilitates an extremely smooth connection between the two sections of this passage.

Given this duality, the strongest indications of key in these first four fragments are drawn directly from the Aug_3^4 that closes each module, in complete opposition to the tonal ambiguity created by the Aug_{x4} from the previous passage. While the Aug₃⁴ in this passage is clearly a result of voice leading procedures, motivic and otherwise, the extent to which it can be responsible for indicating key is so far unexplored. Abstractly, it constitutes many tonic-defining scale degrees: the augmented sixth interval is built between the Neapolitan note and the leading tone, while the diatonic origin of V4/3 ensures that it will also include scale degree 5 and the seventh of V^7 (scale degree 4). Each of these scale degrees is imbued with expectations for behaviour at their resolutions. However, despite its saturation with tendency tones, the lack of tonic-category chords in this passage prevents the Aug_3^4 from defining the key with much clarity: without fulfilling their tendencies, this combination of pitch classes creates the aural impression of rather ambiguous chromaticism, save the parallel modal shift created by the sixteenth-note motive. prevents the Aug_3^4 from defining the key with much clarity: without fulfilling their tendencies, this combination of pitch classes creates the aural impression of rather ambiguous chromaticism, save the parallel modal shift created by the sixteenth-note motive.³⁴

The new D major tonic is eventually further clarified by the major dominant seventh in mm. 77 and 78, reinforcing the key indicators provided by the Aug_3^4 that it prepares. The metrically accented dominant seventh changing to the Aug_3^4 generates momentum and

³⁴ Tchaikovsky's tonic category includes I, vi, and their inversions

expectation for resolution to a tonic, but the progression continues to be fragmented. It is now clear that the switch from minor to major dominant seventh preparation of the Aug_3^4 is another step in the gradual modulation to D major. As Figure 4.24 shows, in mm. 78.4 – 82.2, the dominant seventh disappears and we are left with only a slightly extended version of the sixteenth note motive in the low strings, accompanied by the lowest winds and brass, which sustain and repeat the Aug_3^4 . The rhythmic activity in the low register, coupled with the harmonic dissonance in the underlying chordal texture and overall low dynamic level creates significant tension. We are denied resolution until the second half of measure 82, when the Aug_3^4 resolves directly to root position D major tonic, finally achieving the modulation.


Figure 4.24: Symphonic score of mm. 77 - 84 with harmonic annotations. Augmented sixth chords highlighted in

This modulation is curious because it occurs without a cadence, in Tchaikovsky's sense of the word. From a modern perspective, it is easy to imagine substituting the Aug_3^4 for the cadential dominant, given all of its aforementioned tendency tones. Tchaikovsky never mentions this possibility, focusing instead on voice leading without positioning the chord within a phrase or formal section. However, the $V_3^4 - Aug_3^4 - I$ progression that spans from measure 78 - 83 of this passage is in fact one of the commonplace models given by the composer in the first measure of Example 284 (see Chapter 2). As such, the progression is enacting a modulation without one of Tchaikovsky's cadential formulae. This further clarifies the role of the major V_3^4 that first appears in m. 77.3: it allows the modulation to be accomplished by a complete, normative progression. The efficacy of this modulation is undoubtedly supported by the gradual emergence of D major throughout measures 75 to 78 and the following motivic material that lies firmly in D major. Each individual portion of the model progression from Example 284 is emphasized differently, allowing for the music to resolve convincingly to a new tonic. The orchestration also supports the gradual modulation and its confirmation, slowly reducing in thickness and declining in register. The final resolution of the Aug_3^4 to D major occurs in the trombones and bass tuba, an orchestral sonority that contrasts greatly to the string- and windheavy sound that characterizes the more harmonically ambiguous, earlier sections of this passage.

As a result of the descending chromatic stepwise bass line from A to D throughout this passage (refer to Figure 4.22), each instance of augmented sixth chord has a different metrical strength en route to the final D major resolution. The enharmonic $\operatorname{Aug}_{x4}^{\#6}$ chords in mm. 74-75 3 occur on relatively strong beats, resolving to metrically unaccented tonics. This generates the

dynamic expectation for metrically stressed chromatic chords with unstressed resolutions.

However, this paradigm is reversed throughout mm. 75-78 with $\operatorname{Aug}_{3}^{4}$ chords occurring on weak beats. The dynamic expectation lends the unaccented $\operatorname{Aug}_{3}^{4}$ chords a goal-like quality at a local scale that results in continued emphasis on the chord throughout this section of the passage. As the bass focus shifts to Eb, the $\operatorname{Aug}_{3}^{4}$ is emphasized through sustained durations, repetition, and the pedal-like setting of the augmented sixth interval in the low winds and low brass.

As a whole, this passage exemplifies the versatility of augmented sixth chords in their developmental contributions, a consequence of the close integration of these chromatic chords into the motivic, contrapuntal, and formal structure of the passage. Their roles range from surface-level embellishment as a result of a contrapuntal process, to tonal destabilization as part of a gradual modulation, to confirming a modulation and marking a structural boundary without the aid of a cadence. The Aug⁴₃ chords in the middle section of this passage, in conjunction with the final resolution to D major in m. 82 show how augmented sixth chords can be tonic defining on account of their constituent tendency tones. Contrastingly, augmented sixth chords can also bring about significant tonal ambiguity, as is the case of the Aug⁴_{x4} chords in mm. 70 – 75. Both of these observations extend the conclusions of Chapter 3 as well as the analysis in the first part of this chapter, providing concrete evidence of augmented sixth chords contributing to the articulation of the middleground level of structure and the large-scale form.

As in the developmental passage in mm. 161-170, the close proximity of the augmented chords encourages their comparison, which facilitates retroactive reinterpretation of the function of these chords within the passage. This effect is especially pronounced when comparing the Aug_3^4 chords in mm. 75 – 78 to those in mm. 78 – 82: the ambiguity created by the mid-passage

augmented sixth chords is contextualized by the modulation that is confirmed in m. 82. This comparison also engages the question of the extent to which augmented sixth chords may be tonic defining. As previously mentioned, the Aug_3^4 chords in the middle of this passage contain many tendency tones that allude to D major. However, since they are not resolved in this middle section, the potential tonic defining energy is not realized until m. 82 when the modulation is confirmed. The agents of tonal destabilization (i.e., the D major tendency tones) are thus revealed retroactively. While this comparison confirms the tonic defining power of the augmented sixth chords, it also contrasts it against that of the enharmonic $\operatorname{Aug}_{34}^{\#6}$. Since this 3 chord resolves to the fifth chord factor of the ensuing A minor 6/4 triad and is not followed by a prolonged cadence of the first class, it does not possess the same tendency tones that allude to the tonic as the later Aug_3^4 chords. It contributes to the definition of tonic only contextually, by consequence of its position within the A minor prolongation at the middleground level.

Again, the examination of a longer developmental passage that contains multiple augmented sixth chords demonstrates the importance of full musical context to understanding how the composer uses them. Musical elements such as orchestration, melodic design, phrase structure, and form considerably enrich analysis and allow for both a detail-oriented and holistic interpretation of the uses of augmented sixth chords within this movement.

4.3 - Conclusions

From the examples treated in this chapter, a few general observations can be made about how augmented sixth chords are used in this movement as a whole. First, augmented sixth chords of all types appear most frequently in development and framing sections of varying scopes. This includes global, mid-level, and local framing sections such as the slow introduction,

the pre-core and retransition of the main development, and phrase-level extensions. It also includes transitional sections such as the bridge between the primary and subordinate theme groups of the *Allegro* exposition, as well as its final developmental passage and dénouement. Augmented sixth chords also most frequently appear in sections with quick tempi, notably including the *Allegro* exposition, the large-scale formal development, and the relatively quicker *Moderato assai* subordinate theme and coda in the second (*Andante*) exposition.³⁵ In these up-tempo sections, the structural significance of the chords varies significantly to include foreground embellishment, middleground integration, and large-scale formal articulation. While augmented sixth chords do appear in the reduced-tempo sections of the movement, they are sparser and tend to either articulate mid-level processes such as phrase structure or to be used as motivic tools that generate dynamic expectation in parallel contexts.

Across levels of structural activity, there is clearly a close relationship between counterpoint (i.e., smooth and correct voice leading) and instances of augmented sixth chords. In many cases, augmented sixth chords result from a motivic voice leading process such as voice exchange or a sequence. This is often aurally clarified by the varying textural realizations and orchestrations of the augmented sixth chords and contrapuntal processes throughout the piece. While surface-level embellishments tend to occur in large orchestral textures, larger-scale instances, such as those of mm. 299-300 and m. 82, tend to be highlighted by suddenly thin, transparent textures of only a few low brass instruments.

The most frequently occurring type of augmented sixth chord throughout the examples analyzed in this chapter is the enharmonic Augx4. Curiously, this chord is only implied in 3

³⁵ Note that both *Moderato* sections in the second exposition are included in the quick tempo group.

Tchaikovsky's manual, modelled once as part of the semitonal enharmonic modulation shown in Figure 2.12. The examples examined in this chapter feature enharmonic relationships in contexts additional to that of enharmonic modulations. While these examples most often show the enharmonic $\operatorname{Aug}_{x4}^{#6}$ acting as foreground embellishment and colouration, it also contributes to $_{3}^{middleground}$ level processes, such as the modulation in m. 170. This chord capitalizes on its enharmonic relationship with the $\operatorname{Aug}_{5}^{6}$, often spelled as such but resolved as expected for the $\operatorname{Aug}_{x4}^{#6}$. Although Tchaikovsky's primary recommendation for this chord is for it to precede $_{3}^{middleground}$ level processes of the first class, most of the examples in which this chord appear feature a full progression that does not feature a prolonged cadence. Many of the middleground and largescale structural instances of augmented sixth chords are of the $\operatorname{Aug}_{3}^{4}$ or $\operatorname{Aug}_{5}^{6}$ type.

That the analysis in this chapter focuses only on one movement in one work raises the question of whether generalizations can be made about the behaviour of augmented sixth chords, both individually and those in close proximity to one another, in other music by Tchaikovsky. While it would be methodologically erroneous to generalize past the samples analyzed in the past two chapters, the analytical evidence support the notion that augmented sixth chords have formal function (i.e., continuation) and that they are contrapuntal entities that are defined by their voice leading, motivic, and formal behaviours. Moreover, the strong melodic and voice leading focus of the *Guide* further supports the notion that augmented sixth chords are likely to be integrated into, and perhaps even contribute to the articulation of, motivic and formal structure. This provides ample opportunity and motivation for further research into the roles and behaviours of augmented sixth chords in other genres of Tchaikovsky's repertoire, such as his art songs, sonatas, concerti, etc.

In all, every example investigated in this chapter reflects the principles put forth in Tchaikovsky's *Guide* in either a literal or partially abstract sense. Every instance of augmented sixth chord can be explained using his examples. Notable deviations, which are discussed in detail in the body of this chapter, are consistently justified by reference to the motivic design and melodic details of the passage in which the chord is located or the theme that is being developed. This prioritization of smooth and strong motivic voice leading is itself in alignment with Tchaikovsky's manual, as is the breaking of the rules when it serves local, middleground, or large-scale exigencies. The pervasiveness of these chords within this first movement of the Sixth Symphony is a result of their versatility as well as their motivic and form-functional importance, which confirm their integral role in this piece.

Chapter 5: Conclusion

Tchaikovsky's pedagogy is extremely helpful in examining instances of augmented sixth chords in his orchestral music. The pedagogical recommendations that are laid out in Tchaikovsky's *Guide* are easily adopted as an analytical perspective. As shown in Chapter 2, these principles can be logically extended using the core values of the composer's treatise and can provide insight into how Tchaikovsky's music and theoretical pillars interact with commonly used terms and concepts in modern music theory such as harmony, harmonic function, and counterpoint. In essence, Tchaikovsky's augmented sixth chords cannot be said to possess harmonic function in the way posited by Ellis (2016) and Kopp (1995) regarding harmonic functional theories of Hugo Riemann. Instead, like Rameau, Tchaikovsky's concept of "harmony" is in fact very contrapuntally oriented. He is most concerned with how to connect sonorities and clearly holds voice leading and contrapuntal behaviour to be identifying elements of vertical sonorities. To put it plainly, a chord's function is how its pitches behave. There are many examples of augmented sixth chords defined by their contrapuntal behaviour throughout all three chapters. Indeed, voice leading is essential in differentiating between inverted augmented sixth chords and inverted origins, between dominant seventh and augmented sixth chords in enharmonic modulations, as well as between the $\operatorname{Aug}_{5}^{6}$ and $\operatorname{Aug}_{2}^{\#6}$. For instance, throughout both Chapters 3 and 4, there are many instances of augmented sixth chords that are spelled as Aug_5^6 chords but resolve as $\operatorname{Aug}_{x4}^{#6}$ chords.

The focus of his compositional principles on the elements of voice leading as well as motivic and contrapuntal structure strongly encourages analytical investigation of how augmented sixth chords interact with these and other musical elements, such as formal function, orchestration, formal and phrase-structural design, etc. This encourages a holistic analytical approach, taking into account the many different musical dimensions that contribute to its aural experience. It also facilitates the incorporation of other relevant literature, such as Zajaczkowski (1987), Gauldin (2004), Harrison (1995), and Straus (2003). Their focuses on voice leading and motivic structure align with Tchaikovsky's perspectives and can be used in combination with the composer's principles in analysis.

Chapters 3 and 4 demonstrate that augmented sixth chords are closely integrated with the motivic and contrapuntal structure of Tchaikovsky's music. This affirms the contrapuntal orientation of the composer, as discussed in Svein Hundsnes' (2014) dissertation, which designates the composer as primarily contrapuntal. These chords are active across structural levels, providing foreground embellishments, articulating mid-level processes and large-scale structural boundaries, and contributing to structural processes such as important modulations. Overall, the analysis in these chapters makes clear that augmented sixth chords in Tchaikovsky's music tend to generate continuation in their contexts (Caplin, 2000). More specifically, they often generate momentum in local developmental passages and large development sections. They also mark mid-level continuation boundaries, such as the beginning of the continuation segment of a hybrid presentation-continuation phrase. Even their foreground-level activity generates momentum: in addition to providing harmonic contrast, they are often paired with increased rhythmic activity and contrasting registers and orchestral textures in order to highlight the momentum and colouration they provide. Their participation in large-scale formal boundary articulation and modulations, which often involve prolonged cadences of the first class, also lends them concluding/cadential function characteristics. Notably, we have observed augmented sixth chords marking the end of a motivic or contrapuntal process and confirming new key areas

by resolving directly to the only stable instance of the new tonic at the end of large formal sections.

Chapters 3 and 4 also show that Tchaikovsky frequently bends his own rules. The most common deviations from Tchaikovsky's principles include abnormal preparations, contrasting the chord spelling vs. chord behaviour (e.g., enharmonic Aug_{x4} chords that are not reinterpreted as dominant seventh chords in semitonal modulation pivots), and extraneous or abnormal pitch classes (e.g., the Aug₄₄ with the singly augmented fourth). However, each of these deviations is accounted for by adherence to an underlying motivic, thematic, or contrapuntal process. Tchaikovsky's orchestration clarifies and calls attention to motivic processes, often separating simultaneous processes into streams of instruments. This makes aurally attending to each motivic process much easier and thus contextualizes any abnormal harmonic activity relative to the theoretical principles. We frequently see Tchaikovsky making use of enharmonic relationships and inversions and often need to rely heavily on his theoretical principles to be able to interpret how some examples fit into their musical context.

While Chapter 3 is useful in both contrasting modern analyses with Tchaikovsky's principles and identifying a wide range of possible uses of augmented sixth chords, Chapter 4 attempts to relate augmented sixth chords to one another in a single musical context. It required further analysis of thematic and contrapuntal structure and an examination of how augmented sixth chords interact in close proximity. Most notably, the second part of Chapter 4 shows how augmented sixth chords can retroactively contextualize each other's motivic and formal function, as well as their level of structure, when they occur within a short time span. Moreover, it demonstrates how augmented sixth chords can be used to generate dynamic expectation in

parallel locations within a section, and how the composer may play with this expectation, either fulfilling it or leaving it partially or entirely unresolved.

Above all, I have demonstrated that Tchaikovsky's augmented sixth chords are versatile and that analyzing them using the composer's principles provides insight on their use that would be otherwise omitted by modern theoretical frameworks and analytical approaches. They cannot be forced into any one harmonic functional category because their contrapuntal behaviour affords them a unique flexibility to function at multiple levels of structure and to adopt motivic, formal, and contrapuntal functions.

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