

FORWARD THINKING, WITH AN EAR TO THE PAST: A PERFORMANCE GUIDE TO
DALLAPICCOLA'S *QUADERNO MUSICALE DI ANNALIBERA*

By

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Abstract

The purpose of this document is to provide a stylistic performance guide to Dallapiccola's *Quaderno Musicale di Annalibera*. It is my hope that this document constitutes a resource comprising information that can help piano students as they endeavor to put forth an interesting performance of Dallapiccola's *Quaderno Musicale di Annalibera*. I will consider post-tonal theory, various features of Dallapiccola's compositional style, and the influence of past musical eras upon his compositions. Each of these considerations will comprise one of three sections total, forming the main body of this document. I have also included artistic and pedagogical ideas throughout, and have provided justification for these ideas by considering common aspects of Dallapiccola's output, as reported by peer-reviewed scholars. I will also apply established theoretical and mathematical procedures to Dallapiccola's music. In a few instances, the result will constitute new research.

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Introduction Part 1: An Introduction to Dallapiccola and the *Quaderno Musicale*

Calum MacDonald has listed Dallapiccola's *Quaderno Musicale di Annalibera* for solo piano, as thirty-eighth of the fifty-eight compositions comprising Dallapiccola's total output. As such, at the time of its writing, Dallapiccola's presence constituted far more than that of a budding composer, and he had already shown himself to be an expert in the manner of composition that he had undertaken. This constitutes one of many reasons that this piece is worthy of a lengthy discussion such as that which will be found in this document.¹

Roman Vlad states that the twenty-second of January 1933 marks the "real" beginning of Dallapiccola's career² and Brian Alegant has divided his career into five total phases as follows:

- “preserial” phase = 1904-1942
- serial phase #1 = 1942-1950
- serial phase #2 = 1950-1955.
- serial phase #3 = 1956-1960.
- serial phase #4 = 1960-1972.³

It is during the second serial phase that the *Quaderno Musicale di Annalibera* was composed. Alegant describes this period as one in which attributes from the first period are continued, which include, quite prominently, the influence of Schoenberg and Webern. He writes that “Schoenbergian” techniques are most prominent in the second phase upon comparing the first two serial phases with one another. This is said to be supported by the fact that Dallapiccola

¹ Macdonald, Malcolm, *Luigi Dallapiccola, The complete Works: A Catalogue* (London: Boosey & Hawkes, 1978),.

² Roman Vlad and Cynthia Jolly, *Luigi Dallapiccola*, (Milano: Edizioni Suvini Zerboni, 1957), 6.

³ Alegant, Brian, *The Twelve-Tone Music of Luigi Dallapiccola* (Rochester, NY: University of Rochester Press, 2010), 11.

seems increasingly to become less and less inclined to produce the row in a purely melodic manner, iterating adjacent members of the row simultaneously, rather than one at a time.⁴

Quaderno was written in 1952, and revised in 1953. It was written for the Pittsburgh International Contemporary Music Festival. It was also written for Dallapiccola's daughter Annalibera, on her eighth birthday. Much of it was composed while Dallapiccola traveled across Canada, the United States, and Mexico.⁵ It came to fruition near the times in which Dallapiccola composed *Job*, *Tartiniana*, and the *Goethe-Lieder*. In addition, Dallapiccola wrote a piece for orchestra titled *Variazioni per Orchestra* that is a note for note transcription of the *Quaderno*, in 1954. He re-used musical material of the *Quaderno*, when he composed other works. The most notable examples comprise the *Canti di Liberazione* (written in 1951-1955), and a film score titled *Il miracolo della Cena—Le vicende del capolavoro di Leonardo da Vinci*.⁶

I personally appreciate that Dallapiccola dedicated this piece to his daughter. An eight-year-old child might appreciate the wide palette of colors offered by this piece. I also think that a reduced texture, frequently soft dynamics, reduced tempo, and often a lack of activity and speed could allow a young mind to appreciate the *apparent* simplicity of this music. It is perhaps through these considerations that the obvious reference to *Notenbüchlein für Anna Magdalena Bach* via the title is most clearly validated, since many of these pieces by J.S. Bach are given to younger students due to many of the same features that I have above ascribed to the *Quaderno*. Though the *Quaderno* is not without its complexities (which should become more and more apparent) when compared to many pieces by Bach that many authors cite as its inspiration, there

⁴ Alegant, *Twelve-Tone Music of*, 11.

⁵ Roman Vlad and Cynthia Jolly, *Luigi Dallapiccola*, (Milano: Edizioni Suvini Zerboni, 1957), 46.

⁶ Macdonald, Malcolm, *Luigi Dallapiccola, The complete Works: A Catalogue* (London: Boosey & Hawkes, 1978),.

are quite fewer notes and the rhythm is less busy than that found in many Bach works, including the *Goldberg Variations*. Some have said that the manner in which the movements are ordered recalls the *Goldberg Variations*, and *A Musical Offering*. This is both due to a similarity between titles, and because studies in counterpoint are paired with movements that are freer.⁷

Though the perhaps child-like features of this piece might be appreciated by a young child, the twenty-year-old version of this child might become shocked upon reading numerous books and dissertations that reveal the *Quaderno* as an incredibly “cerebral” work, imbued with considerable order and meaning. Though there are fewer notes present, numerous compositional procedures can be seen to balance the aphoristic quality of the work (not to denigrate aphoristic works). How Dallapiccola was able to incorporate so many systematic traits and procedures, while still keeping the work aesthetically pleasing is unknown to me. The music seems to breathe, and yet, again, it's incredibly ordered.

Luigi Dallapiccola was a composer of great consistency. As such, there are pieces by him that can, by themselves, give musicians a wide ranging general idea for his compositional style. The *Quaderno Musicale di Annalibera* is a particularly good example of one of these pieces. Many varied considerations can be viewed as sources of inspiration to pianists performing the *Quaderno*. Dallapiccola's unique use of dodecaphony, mindfulness regarding musical eras of the past, tendency toward symbolism, and affinity for orchestral and vocal writing are just a few of these considerations. Many of the qualities described by Rosemary Brown in her comprehensive dissertation titled *Continuity and Recurrence in the Creative Development of Luigi Dallapiccola*

⁷ Vlad and Jolly, *Dallapiccola*, 46.

arguably are featured in this composition.⁸ Considering the above, it is no wonder that the *Quaderno* is so well-known among Dallapiccola's compositions.

Introduction Part 2: In Praise of Dodecaphony and Dallapiccola's *Quaderno*

The *Quaderno Musicale di Annalibera* was perhaps the first piece by Dallapiccola I had ever heard. At the time of my listening, I knew of Dallapiccola's existence, however I did not remember much about him. Though this was obviously a piece outside of the mainstream of diatonic music, it appealed to me as much as impressionistic pieces that are commonly lauded such as Debussy's *Suite bergamasque* (not surprisingly, as Debussy's music greatly impacted Dallapiccola).⁹ After conferring with sources and with professional musicians, I was also made aware of the possible influence of Bartok and pieces from the late period of Franz Liszt's career. Notable examples include *Les Jeux d'Eaux à la Villa d'Este* and *Nuages Gris* of Franz Liszt, as well as *Ostinato* from Bartok's *Mikrokosmos*.

I found the *Variazioni per Orchestra* to be something any audience would appreciate. I speculate that audiences would not find this orchestration out of place in a film score, or as music to a popular opera, or musical (this is also not surprising because Dallapiccola was influenced by opera). When listening to the *Variazione*, I speculated that audiences might not be able to tell that this music often sounds dissonant when performed on a single instrument, being quite charmed by the variety in tone produced by orchestral effects (including the use of harmonics and percussion instruments like the Tam Tam). By the end of my initial listening, I had decided

⁸ Rosemary Brown, "Continuity and Recurrence in the Creative Development of Luigi Dallapiccola" (Ph. D., Bangor: University College of North Wales, 1977),.

⁹ Brown, "Continuity." 4.

that the *Quaderno* was a masterpiece, and yet, I could not say why. I was reminded of something that Mozart once wrote in a letter, regarding his piano concertos:

These concertos are a happy medium between what's too difficult and too easy—they are Brilliant—pleasing to the ear—Natural without becoming vacuous;--there are passages here and there that only connoisseurs can fully appreciate—yet the common listener will find them satisfying as well, although without knowing why.¹⁰

I find myself asking if, as an audience member, I am not analogous to the “common” listeners that Mozart referred to. I'm not afraid to admit that I cannot analyze a piece of dodecaphonic music after listening to it once. My early musical education gave me tonal ears. Perhaps the "less learned" of Mozart's audience had yet to discover the complex possibilities that tonality can offer. As we do not find it odd that audiences enjoyed the music of Mozart without understanding the deeper significances, I imagine that someone in the future might not find it odd that I enjoyed the music of Dallapiccola but did not know why.

The main difference I perceive when comparing these two composers here is that I don't think Dallapiccola rendered his music more appealing to audiences begrudgingly which is something one may or may not perceive upon reading the entire letter. However, I find it hard to imagine that even Mozart didn't love the concertos as much as nearly everyone does, whether or not they exemplify his idea of the "inane."¹¹

Although audience members have perhaps not yet begun to appreciate fully the music of Dallapiccola, Schoenberg and Webern in the way that they have for Mozart, I wonder if Dallapiccola's music could become as popular as Mozart piano concertos in the future. I've noticed that a perhaps surprising number of scholars have already taken to dodecaphonic music with great enthusiasm.

¹⁰ Robert Spaethling, *Mozart's Letters, Mozart's Life* (New York, London: W.W. Norton & Company, 200), 336.

¹¹ Spaethling, *Letters*, 336.

Although this piece might seem to pale in virtuosity when compared with a Rachmaninoff piano concerto, for example, it is not out of place among works of the serious piano repertoire. One could argue that it is one of Dallapiccola's most substantial compositions, for a number of reasons. J.S. Bach was known for including within his pieces, a musical representation of his name via the four notes "B-flat," "A," "C," and "B" (in German, "B" is called "H"). As I will discuss, many see Bach's inclusion of this musical cryptogram, as an indication giving special importance to those pieces of music to which it is applied. Dallapiccola has used the B-A-C-H motive many times in order to convey *varying* messages, so a similar perception may not always be appropriate. However, with the *Quaderno*, this motive essentially comprises the entire first movement of the piece. Almost all of the notes in this movement are linked to the B-A-C-H motive, and the accompanying lines that are invariably presented alongside it. To my knowledge, this use is unusually excessive for Dallapiccola.

Dallapiccola has been known to use the B-A-C-H motive, in order to convey a message of seriousness, reverence, or great penitence.¹² Again, it's important to note, that Dallapiccola utilizes this message within varying contexts. Though Bach used the motive frequently in his work, one could place a special significance in the fact that he included it at the end (?) of one of his most substantial works *The Art of the Fugue*. Rosemary Brown suggests that Dallapiccola's use may speak "both of the severity of the procedures and of Dallapiccola's mastery in their use"¹³ through other allusions to the *The Art of the Fugue*, i.e. through the titles that contain the word "contrapunctus." She goes on to explain why Dallapiccola's contrapuntal technique is ingenious. I highly recommend studying her work.

¹² Brown, "Continuity," 281.

¹³ Brown, "Continuity," 551.

Some seem to have placed a legendary significance to at least one instance in which the B-A-C-H motive was used. Regarding The Art of the Fugue, Roy Harris and M.D. Herter Norton write that, “The Art of the Fugue is Bach's last great work.” It is further stated that “we must accept this work as a final statement of Bach's conclusions concerning contrapuntal music.”¹⁴ This argument is made in lieu of the fact that some editions of the *Art of The Fugue* include a note claiming that ‘Fuga a 3 Soggetti’ is the last piece that Bach wrote. This consideration would give considerable weight to the instance of the B-A-C-H motif at the end of this unfinished piece. This is however, a dubious claim for numerous reasons described by Herausgegeben von Peter Williams in the Eulenburg edition of *Kunst Der Fuge*.¹⁵ He also states:

The most elusive question in the *Art of the Fugue* concerns the nature of the music itself, for while it is clear that the theme has both a curiously intrinsic tunefulness and an extraordinary contrapuntal potential based on a natural, harmonic simplicity, it is by no means clear what the pieces are. Are they *exempla* in fugue and canon? – and if so, what kind of *exempla*: for students? For performers? For publication with a text? For those personal reasons that often led J.S. Bach to make collections of music? To serve as a further contribution to Lorenz Mizler’s ‘Society for musical Sciences’ in Leipzig?¹⁶

This indicates that the exact purpose that Bach himself would have ascribed to this work (assuming all the works were even intended to be compiled in the exact way they have been) is not fundamentally established. In any case, it can certainly be said that others have placed a legendary significance upon this work, which I believe would be legitimate even in consideration of the musical content alone. In addition, the perhaps coincidental inclusion of Bach motif right

¹⁴ Roy Harris and M.D. Herter Norton, “The Art of the Fugue,” *The Musical Quarterly*, Vol. 21, No. 2 (1935): 166.

¹⁵ Bach, Johann Sebastian, and Peter Williams. *Kunst der Fuge Art of fugue : BWV 1080*, (London: E. Eulenburg, 1986), V-XLVI.

¹⁶ Bach and Williams. *Art of fugue*, XVII-XIX.

at the end of this unfinished work, is noteworthy even if it constitutes a source of questions rather than answers. Regarding its appearance in the *Art*, and in Bach's output Williams writes:

That the last four notes are a version of B-A-C-H should not be missed. Much of J.S. Bach's most original and seminal harmony in his earlier works was achieved with this formula used inventively (e.g. organ chorale 'Das alte Jahr vergangen ist', *Orgelbuchlein*, BWV 614), and it is still to be heard behind many passages of the *Art of Fugue*

Though the *Quaderno* is miles away from being one of Dallapiccola's last great works, I think this piece represents well, many elements of Dallapiccola's style. That Dallapiccola placed great importance upon this piece is evidenced by the fact that he revised it, and quoted it in many of his other compositions. Though Raymond Fearn warns against the following,¹⁷ I would say that to think that Dallapiccola included the B-A-C-H motif, as a way to signify that this is his own 'Art of Dodecaphony' (or something cleverer) is at least a thought worthy of speculation. A message may be conveyed, that this piece should also be treated with great reverence, or in any case that it was considered as such by Dallapiccola. This may be evidenced by Dallapiccola's subtle inclusion of his own name in this piece as well, which I will discuss later.

This may be a good piece for an advanced pianist who does not like dodecaphonic music. Perhaps he or she will perform in a piano competition, and has been required to play a dodecaphonic piece. Or perhaps he or she is not enthusiastic about dodecaphonic music, but is curious to find out why some people are. For someone in either of these categories, this piece would be a good place to start. Those that prefer tonal music will find appealing moments in this music. Ears that have been tonally trained may become lost, but never completely bewildered. If nothing else, one would be able to recognize the triads, open fifths, and seventh chords (synonymous with those elsewhere serving tonal functions) that miraculously present themselves, while still maintaining row structures.

¹⁷ Raymond Fearn, *The Music of Luigi Dallapiccola* (Rochester, NY: University of Rochester Press, 2003), 157.

Any pianist that chooses this work over others, due to a preference for the tonal system, may be astounded to find that, even compared with pieces by Dallapiccola's contemporary dodecaphonists (like Schoenberg and Webern) the *Quaderno* may be of an equally ordered nature from a dodecaphonic standpoint. Yet, the music sounds free. It does not seem constrained. This combination of order and expression constitutes one of the features that render this piece irresistible.

I admit that some parts of this document are intended to promote dodecaphony. It is interesting to note that this kind of writing is common for Dallapiccola, who wrote much in praise of dodecaphony. He has said that other movements in music have come and gone, but dodecaphony keeps coming back over and over again. He writes:

Whatever one may say, no system (or so-called system) produced in this century has had more power than the twelve-note system to set things moving. No other system has been so persistently and acrimoniously opposed ; other systems, having once fallen into disuse, have never reappeared, whereas this one *did* reappear, and during the war years at that, in isolation and in all countries independently.¹⁸

I can understand why these kinds of ideas may seem overly optimistic, however if there is any genre of music that could use a bit of optimistic promotion, it is this one. Even as I admit this, I must also admit that it has been my personal experience over the course of my education, that there remains much interest in this study. And I find Dallapiccola's statement rather convincing, even though I admit it probably does not apply as well to the United States in 2016, as it may have to Florence in 1950.

Section 1: Various aspects of Dallapiccola's Style

Section 1 part 1: An Introduction to Section 1

¹⁸ Luigi Dallapiccola, "On The Twelve-Note Road," 1950. trans. Deryck Cook (*Music Survey* 4 1951), 331.

In this section, I will discuss various aspects of Dallapiccola's compositional style, and how they can relate to the performance of the *Quaderno Musicale di Annalibera*. These observations will deal largely with his instrumentation, certain means of expression, and certain symbolic representations. I will not discuss common aspects of post-tonal music theory here.

Section 1 part 2: Dallapiccola and Vocal Music

The *Quaderno Musicale di Annalibera* is somewhat anomalous among the compositions of Dallapiccola in that most of his works include texts, and parts for vocalists. His works that contain texts can be seen as more inherently imbued with a message, attitude, or emotion through words. It has been said of his work in general, that he aims at "meaning and psychological suggestiveness."¹⁹

Since the *Quaderno* is an instrumental island amidst a sea of vocal works, should performers take a different approach? Or should we try as pianists to keep Dallapiccola's "psychological suggestiveness" in mind? Did Dallapiccola wish for this music to be performed with the attitude of works like *Volo di Nozze* and the *Canti di Liberazione*? Both works are said to be imbued with profound philosophical and political statements.²⁰ As stated before, many of the staples of Dallapiccola's style are featured in the *Quaderno*, so I think that the answer is yes. Pianists should have in mind an imaginative extra-musical message that he or she wants to communicate. The large majority of pieces by Dallapiccola contain extra-musical messages. This brings to mind many questions. If Dallapiccola had written words to the *Quaderno*, what would

¹⁹ Hans Nathan, *The Twelve-Tone Compositions of Luigi Dallapiccola* (New York: G Schirmer, 1958), 305.

²⁰ Vlad and Jolly, *Dallapiccola*,.

they have been? How can the performer, be taken into Dallapiccola's world, and therefore invite his/her audience to do the same?

Roman Vlad writes that all of Dallopiccola's pieces, even the purely instrumental works, possess a "special vocal quality."²¹ I noticed this from the very opening of the *Quaderno*. The opening movement could work as an arrangement for three vocalists, and a few instruments. Each voice of the right hand (of which David Lewin convincingly tells us there are three²²) could be given to a vocalist, and two (or more) separate instruments could be given the ostinato (as would be consistent with the instrumentation of the *Variationi per Orchestra*). An arrangement like this would be more consistent with the output of Dallapiccola, than that of a piano solo.

Here, the long sustained notes (usually of the right hand) could be brought out in a manner that allows a full vibration of the string to continue for as long as possible. A vocalist is able to sustain the sound beyond the initial attack (unlike pianists!) When the rhythm of the melody increases, it should be played expressively and flexibly, perhaps even mimicking speech (an instruction Dallapiccola frequently includes for other movements of this work). Perhaps the voices should not blur very much, just as it's impossible for a vocalist to blur two notes together. A sparing use of pedal would also be consistent with a popular approach to Baroque performance in the modern day, lending relevance of this type. Dallapiccola was also quite concerned with text comprehensibility. There are no texts here, however so few notes are included that each and every one can be heard clearly (at least in cases where a vocal influence may be prominent. There are moments in the piece where “blurring” is desired).

²¹ Vlad and Jolly, *Dallapiccola*, 5.

²² David Lewin, *Musical Form and Transformation: 4 Analytic Essays* (New Haven: Yale University Press, 1993), 1.

Section 1 part 3: "Furioso" vs. "Soft and Starry Climes"

Two contrasting styles present themselves often in the music of Dallapiccola. Rosemary Brown describes these two styles as "unnatural outbursts of violence and 'soft and starry climes.'"

²³ Regarding this, Roman Vlad writes:

...a genuine *furuor dramaticus* makes itself felt. But even in his early works, this violence of sound is counterbalanced by moments of delicate and refined beauty of timbre, which lifts the thematic material far beyond any impressionistic significance to a level of purest lyricism.²⁴

The *Quaderno* is largely a piece of the second type. Most of the movements are quiet and slow. However, two movements ("Accenti" and "Ritmi") might have at least some element of the "furore dramaticus" described. At the point in Dallapiccola's career which this piece was written, this feature had already established itself frequently. Considering this, one could give this idea special importance.

That a "con fuoco," or "violento" marking is only found in these two movements, can make its appearance all the more "forceful" or "violent." As such, the performer can hold completely still at the end of the preceding movement, and avoid giving away the surprising mood of these movements until the precise moment that they have begun. This will underline Dallapiccola's trademark contrast as above described.

When performers begin these movements (II and VIII), he or she should play with passion so that they are really memorable. I should think that these movements should not be played overly metronomically, and the sixteenth notes of "Accenti" could be played a little bit faster and maybe without being overly consistent (as if mimicking the accents and often

²³ Brown, "Continuity." 572.

²⁴ Vlad and Jolly, *Dallapiccola*, 6.

somewhat haphazard rhythmical patterns of speech). In general, a small amount of speeding ahead could be allowed (as one might observe in an impassioned "rage aria" from a Mozart opera seria).

Section 1 Part 4: Messages Through Self-Quotation

Dallapiccola often re-used his musical material. Considerations with respect to the *Quaderno* exemplify this practice. Material from the *Quaderno* is used most notably in the *Canti Di Liberazione*. It's quite interesting to note that these two pieces are connected in more ways than one. Dallapiccola's daughter was born in Florence in 1944. At this time, this city was being liberated from German forces. On the tenth anniversary of this event, Dallapiccola began to compose the *Canti di Liberazione*. It is also notable that the name Annalibera appears to contain the Latin root for liberation. Dallapiccola himself talked about this, and Brown writes, "Dallapiccola finds a grain of symbolic justification for this in a very general sense: 'Libera - Liberazione: the root is the same.'"^{25 26}

The opening of the *Canti* borrows the opening melody from the right hand of the sixth movement of the *Quaderno*, titled "Fregi" (meaning decorated, or ornamented). That this melody should be played in a speaking manner is already noted by the composer (who writes "Molto lento; con espressione parlante"). It could help a performer to know which notes constitute the stressed syllables of the words from the *Canti*. A pianist could try to get the piano to speak Latin. The word "divina" of the *Canti* is coupled with material from measure six of "Fregi." Here the pianist can take some time, and present an especially "divine" color. This is also a crucial moment in the piece for structural reasons, so it's appropriate to treat it specially.

²⁵ Brown, "Continuity." 306.

²⁶ Vlad and Jolly, *Dallapiccola*, 52.

The eleventh movement, "Quartina," is quoted at the end of the first canti in the instruments. Here, no vocalists sing the material. However, it could be useful to note what instruments are used. For example, the chords in the left hand are quite often given to the trombone and the trumpet. As such, the pianist could bring them out with a little more brightness and resonance. Pianists might also be more inclined to separate the chords with a small breath, as brass performers might need to do from time to time. A legato marking is not given here, which would otherwise contradict this idea.

The second movement of the *Canti di Liberazione* does quote the eighth movement in an instrumental section marked, "Ritmato; con violenza." However I don't know that a pianist can apply its use to performance. The material itself is almost impossible to hear and recognize for various reasons. If it helps the pianist to think of a story to project a mood for the piece, he or she can know that the text that accompanies this material deals with the defeat of the armies of Egypt from the book of Exodus. And the instrumental section marked "Ritmato; con violenza" commences just as vocalists finish singing that "the Lord is a warrior." It's almost easy to see through various reasons that the eighth movement of the *Quaderno* could be perceived as war-like (there could be opera seria tendencies as I will discuss later). However, that the nature of the war might be that of the victor, rather than the bystander, victim, or some other entity, might influence the expression to one less traumatic. There are instances in Dallapiccola's output where war is depicted in a terrifying way. It might be more valid to take a different approach for this movement considering the above.

The third movement of the *Canti di Liberazione* takes from numerous movements of the *Quaderno*. The opening utilizes pitch class material from the middle section of "Ombre," movement ten. The register of the tremolo material differs from that found in the *Quaderno*. The

cello, piccolo, and clarinet tend to take over the role of the tremolo. Correspondingly, pianists can change the timbre of the tremolo, when it is found to change register in the *Canti*. Doing so will add to a murky and dark feeling. A feeling that is supported by the remorseful text of this movement, which refers to St. Augustine and his lament.

Section 1 Part 5: Dallapiccola's Love for his Homeland, and Personal Experiences as Inspiration

Hans Nathan writes that Luigi Dallapiccola is often compositionally inspired by personal experiences.²⁷ Roman Vlad writes that being away from home may have inspired Dallapiccola while he was writing his *Quaderno Musicale di Annalibera*. He considers that the fifth movement titled, “Contrapunctus Secundus (Canon Contrario Motu)” could be inspired by memories of Italy. Indications here include "alla Serenata," "quazzi pizzicato," and "quasi accordando." Vlad writes that this is, "as if to recall the light nocturnal thrumming of guitars and mandolins."²⁸

The marking "quasi accordando" apparently means "as if the 'players' of the serenade are tuning up."²⁹ I can personally hear the second measure and the first half of the third measure as reminiscent of string players tuning their instrument. Two sixteenth notes are followed by an eighth note that is a step higher. This sounds to me, similar to a guitar player strumming, and tightening the string. In the beginning of the third measure, one could imagine the instrumentalists playing open fifths, testing out their instruments. How can this help pianists? One could think of the opening four measures as instrumentalists tuning up, and the last four, as an actual performance. In this case, the opening four measures could be played with a more

²⁷ Nathan, *The Twelve-Tone*, 307.

²⁸ Vlad and Jolly, *Dallapiccola*, 47.

²⁹ Fearn, *The Music of*, 163.

relaxed and carefree feeling, whereas the last four could be stricter, as with an actual performance. Pianists could take maybe a brief pause to collect him or herself before undertaking the "piu espr:;affetuoso" section (which is the only section with "quazi pizz" markings, and which contains markings that are quite different from its opening counterpart).

Section 1 Part 6: The Piano as *Variazioni per Orchestra*

I think it can be useful to think of the piano in orchestral terms since Dallapiccola wrote many works for instruments other than the piano. However, I do not want to do a disservice to the unique qualities (such as that of timbre) possessed by these two individual pieces, by relating them one to another. I include these ideas because I think it's possible that since the orchestral version was composed after the piano solo, markings could have occurred to Dallapiccola late. I have also noticed that Dallapiccola has at times quoted himself using the same instruments, when it would have been entirely possible for him to utilize different instruments. To me, this could indicate that at times, Dallapiccola aimed for consistency and wanted a specific sound. I cannot say without a doubt that the *Quaderno* is a good example of this, however I want help pianists to be aware of the orchestral version, just in case there is some value in this awareness. As with most of my ideas, my discussion of the *Variationi* is by no means intended as an absolute statement of the manner in which the piano solo should be performed. Section 1 part 6 is intended for the pianist that would like to search for possible sources of extra inspiration.

In her dissertation, Rosemary Brown writes that *Pelléas et Mélisande* and *Iberia* by Debussy had an influence on Dallapiccola.³⁰ Something I noticed about these works, and many written by Dallapiccola is the use of bell-like instruments, instruments that often represent the

³⁰ Brown, "Continuity." 4.

"soft and starry clime" element of Dallapiccola's music. I find for the *Quaderno*, the kind of sound produced by a glockenspiel, celeste, vibraphone and harp would not be out of place. Moments in the music, of notes in the high register marked with a staccato-tenuto (especially in addition to a slur) are appropriate for this kind of sound. I think good examples of this type of use are found in movement nine and movement three. In movement three, the *Variazioni* features the vibraphone, celeste and harp in the 'left hand.' The use of the soft pedal as a coloristic instrument, as opposed to a mere mute is an idea that has been advocated by many pianists.³¹ The soft pedal, coupled with just the right type of attack, can create a bell-like sound. In this piece, conveniently, instances of the marking I have described are accompanied with a triple ppp, pp, or molto p. It seems in the orchestral part of movement three, there exists a great variety of timbre between different voices. It would be difficult to produce a completely unique timbre for each of the three voices, but if done effectively, a quite tasteful rendition would result.

In "Simbolo" at the left hand of measure fifteen one can view the tenuto staccato marking. This moment is given to the harp. Use of the soft pedal, can help achieve a different timbre in the piano, that might sound slightly similar to a harp. A ppp marking also indicates that this moment should be one of great delicacy.

At movement four, measure four of the "left hand," the trumpet is muted. However, in the scores, an accent is given. Perhaps pianists could make this a unique kind of accent, maybe one of a different color. Perhaps one could play this note especially quietly, leading towards it in the phrase, but backing away at the arrival. Special emphasis is also given to eighth note number two of measure nine in the score of *Variazioni* (i.e. pitch class 2). This is not indicated in the piano part. I think pianists could hold this note a little bit longer than the others, and give it a

³¹ Boris Berman, *Notes from the Pianist's Bench* (New Haven: Yale UP, 2000), 109.

slight accent. The effect here of the orchestral version is musically sound, and I think it would work just as well at the piano. I think that pitch class 2 anticipates pitch class 9 very well here. The fifth relationship between these two pitch classes could even have cadential implications.

Figure 1.6a: Movement IV of *Variazioni per Orchestra*, measures 1-4³²

³² Luigi Dallapiccola, *Variazioni per Orchestra*, (Milano: Edizioni Suvini Zerboni, 1954), 12.

Figure 1.6b: Movement IV of *Variazioni per Orchestra*, measures 9-10³³

At movement six in the orchestra, a murky sound is the result of numerous instruments of the low register (including tremolo timpani, tuba, and trombone). Pianists can use the pedal a bit more in this movement, to accommodate this effect. The melody, however, should be projected strongly and passionately (via the marking, *intenso*). The notes in the left hand should be played quietly, and the notes of the right hand should ring out, clearly projected. Clarinets have the melody, so an intensity of timbre can be observed (as with many wind instruments, except maybe flute). At the point that the counterpoint is inverted, the cello takes over the melody for a time, before handing it over to the trumpet which in turn hands it over to the tuba and cello

³³ Dallapiccola, *Variazioni*, 13.

(doubling one another) at the end of the piece. Dallapiccola is known for dividing material between instruments. As a pianist, this could mean once again, creating a great variety in timbre as he or she travels through the lush notes of this melody. I would play the last few notes of the melody significantly, with a weightiness. When the tuba and cello are doubled, a very unique and dark sound results. The sonorities ringing out at the end of this movement are very dark, and pianists should really observe the "lunga" fermata marking given here in order to increase the suspense. Pianists should also contrast the sound in the next movement, which is in a high register. Notice once again that the tenuto staccatos are given to chords that are played with the harp. Here, the harps can hardly be heard. One can try to mimic this effect in the piano.

At the beginning of the seventh movement, the violins are marked "sordina," and "dolce." A very special "sotto voce" sound should be produced here. The hammer should barely touch the string. The orchestra performs the dyad at the fourth eighth note of measure six in a very unique way. All instruments drop out, except for the vibraphone which is marked ppp. This dyad should be played extremely softly and beautifully, and the pedal should be lifted completely to cut off all sound in preparation for this dyad in order to parody the texture (or lack thereof) in the orchestra.

I found the "Allegro; con violenza" really expertly orchestrated, and highly effective. Pianists can search for the most prominent material in the orchestral score by listening for doublings, varying dynamics, and prominently sounding instruments. However it quite appears that Dallapiccola has already managed to communicate these things via his original markings.

At the third measure of movement nine (left hand/8th#2), pianists can change the color to express the warm sound of horns. Since this movement is titled "Colore," color changes are especially important. The duplet dyads characterizing each measure, are given to many different

instruments, and harmonics are often implemented. Especially with the flutes of measure nine and the clarinets of measure eleven, a strange and beautiful sound is the result. Pianists should take great care to provide variety when playing these dyads. He or she could alternate, using soft pedal for one moment, and withholding it for the other. Pianists could hold the pedal down for one, and half down for the other, fluttering (etc). The last chord of the piece features the celeste. This is a good moment to use the soft pedal, in order to try to create a bell-like sound with the piano.

While the B section of the "Ombre" movement was a prominent feature of the first Song from the *Canti di Liberazione*, no such thing can be said of the surrounding A sections. Quite stunning is Dallapiccola's rendering of them via the *Variazioni*. He has given the A sections over completely to the brass. The A section is marked grave, and yet the brass instruments give it a feeling perhaps of 'Grave con fuoco.' A heavy, and yet pronounced sound is the result. The tremolos are represented as they were in the *Canti*, with clarinets, flutes, and most prominently the cello. This consistency between the orchestration of the *Canti* and the *Variazioni* to synonymous material could be a further argument supporting the kinds of thoughts I'm discussing here. Dallapiccola was aiming for consistency, and it seems maybe that he preferred for the material to be expressed in one specific way. Unlike the *Canti* however, the exact frequencies of the piano solo version *are* maintained in the *Variazioni* (not just pitch classes). I also notice a greater use of timpani and bass drum tremolos here. This gives the B section, a murkier feel. The marking "con molto ped" is thus justified. Reminiscent of Dallapiccola's dual nature, the middle movement should be an immediate contrast, as a polar opposite with the A section. Trumpets are given the strange (?) quintuplet of measure thirteen. This should be staccato, but not too dry. The use of pedal here would be reminiscent of the sound that is

produced by the trumpets in a hall. Somehow, the A section of the orchestration returns with even more power and force than it did before, giving the music something of a conclusively terrifying feel. More instruments enter here when compared with opening of the movement. This is not something indicated in the piano score, however pianists could absolutely play this third section with all the power he or she can muster. I don't find a FFF consideration to be inappropriate. The effect is quite memorable. One could argue, however, that in doing so, a nuanced representation of "shadows" via a more strict representation of the ABA symmetry would be somewhat lost by this more dramatic and developmental interpretation.

I really enjoyed the simple and pleasant manner in which the "Quartina" movement was orchestrated, though it too is not without expression and mystery. I'm not sure much can be learned from the orchestration, as a pianist. However, I notice moments where the orchestration changes substantially. In measure ten, many instruments drop out, and the trombone, tuba, timpani, and harp enter simultaneously, rendering the sound, more weighty and different from previous material. Pianists could hesitate for a brief moment, before embarking upon this measure, and begin it as if it's a particularly significant and new moment. As mentioned elsewhere in this paper, measures 10-13 are important for reasons mentioned by Raymond Fearn.³⁴

Section 2: Post-Tonal Theory and Rhythm

Section 2 Part 1: Dodecaphonic Analysis

Dallapiccola adopted the dodecaphonic style for attractive reasons. He writes:

It seemed to me that twelve tones would enable me to articulate a melody better than seven-to write a richer and (as far as my capacities would allow) more expressive melody.

³⁴ Fearn, *The Music of*, 169-170.

To say nothing of the fact that for many years I had observed how often the same succession of tones was used (and with not too dissimilar characteristics) by the great masters.³⁵

And elsewhere:

Personally, I have adopted this method because it allows me to express what I feel I must express.³⁶

Dallapiccola adopted this technique, because he felt it had more to offer him. He made this system work for him, he didn't work for it. Pianists can keep this in mind, with an attitude and the belief that he or she can provide extremely rich expression via twelve-note rows. A performer of this music should really believe, or pretend to believe, that this music is just as exciting, just as valid as tonal music. This music is not random. Music in which every element of pitch and rhythm is determined by the roll of the dice sounds terrible... (usually). Pianists can aim to sing this music with all the richness and expressiveness expected from the performance of a piece by Rachmaninoff (or perhaps Samuel Barber, who also utilized dodecaphony amazingly in his *Nocturne*).

Dodecaphony clearly plays a huge role in this piece. Here, I find that an awareness of these rows will influence the performance of this music. Dallapiccola often organizes his musical phrases with respect to iterations of the various rows. It is not common to see a change in texture, tempo or some feature of expression, before a row, or hexachord has made itself fully heard. I find this analogous to much tonal music, where sections are organized via periods, keys, and cadences. A series of roman numerals are presented, but usually major changes in pieces occur after cadences. I cannot say that knowing where the rows begin and end here, is as essential as knowing where important cadences are found in tonal music. But pianists should be aware that

³⁵ Nathan, *The Twelve-Tone*, 303.

³⁶ Dallapiccola, "On The Twelve-Note Road," 330.

material changes over the course of these movements, and these changes are coupled with statements of the row. An extremely good example of this can be found in "Simbolo" where Dallapiccola implicates a pure triad at the end of the initial row. Here, it seems to be approached cadentially (even in the bass, where a shift in meter allows pitch class 10 in the downbeat of measure four to move to pitch class 11 at the downbeat of measure five, perhaps as a parody of the leading tone).³⁷

Members of the row are not always presented horizontally. Quite often, multiple members of the row share a moment in time, a feature that Brian Alegant ascribes to the influence of Schoenberg during his second dodecaphonic period.³⁸ However, at the moments where the row is presented horizontally, as a melody comprising a full twelve tones, the result is nothing less than a re-occurring theme every bit as significant as the first or second theme of a sonata form, or a "leitmotif." Statements of the melody in prime and inverted forms in movements three, six, and eleven can easily be perceived to contain the same melody. Dallapiccola has mercifully maintained (with some exceptions) the contour, making it recognizable, both on the page and with the ear. In other movements, it would be more difficult to hear the groupings, due both to their vertical allotment, and to changes in the direction or register of the intervals.

³⁷ Brown, "Continuity." 159.

³⁸ Alegant, *Twelve-Tone Music of*, 11.

N. 3 - CONTRAPUNCTUS PRIMUS

7

Mosso; scorrevole (♩ = 72)

(sempre dolce) *molto p*
mp
 (l'impiego del Pedale sia molto discreto)

molto p *pp*
mp *p* *pp*
mp *p*

m. d.

Figure 2.1a : Movement III from the *Quaderno Musicale di Annalibera*, measures 1-9.³⁹

³⁹ Luigi Dallapiccola, *Quaderno Musicale di Annalibera*, (Milano: Edizioni Suvini Zerboni, 1953) 7.

Molto lento; con espressione parlante (♩ = 76)

The musical score consists of two systems of music. The first system shows the beginning of the piece with a melodic line in the right hand and a harmonic accompaniment in the left hand. The tempo is 'Molto lento' and the mood is 'con espressione parlante'. The score includes dynamic markings such as 'dolciss., ma intenso', 'pp; sost.', and 'dolce; intenso'. There are also trills and triplets indicated in the notation.

Figure 2.1b: Movement VI from the *Quaderno Musicale di Annalibera*, measures 1-6.⁴⁰

Since an understanding of the rows may be relevant to musical expression, I have provided a full analysis of this piece that presents all of the rows and where I believe they have been placed. This can be found in the Appendix Part 1. I don't intend to include anything here that is not already established. With exceptions, I hope that this analysis is agreed upon by most theorists. A knowledge of post-tonal theory will have to be assumed. Many resources can communicate this knowledge, including *An Introduction to Post-Tonal theory* by: Joseph N. Straus.⁴¹

⁴⁰ Dallapiccola, *Quaderno*, 7.

⁴¹ Straus, Joseph Nathan. *Introduction to Post-tonal Theory*, (Englewood Cliffs, NJ: Prentice Hall, 1990).

There are special qualities held by the row that Dallapiccola has chosen. Concepts such as combinatoriality and invariance are especially relevant to this row. This is also an “all-interval row” but only with respect to unordered-pitch-class-intervals. Due to the intervallic distance between the first and last members of the row (a tritone), rows that begin with the same number, also end with the same number (see p5 and i5 for example). I believe that these qualities, play a crucial part in the unique and varied sound world that is created by this piece. Indeed, Dallapiccola's discovery of this row in and of itself speaks of his compositional ingenuity. It comprises <te3682157094>.

The first and last hexachord of this row are inversions of one another. As a result, specific prime and inverted rows are combinatorial, i.e. notes of the first hexachord in the prime form will equal notes of the second hexachord in the inverted form, and vice versa. Jacqueline Ravensbergen has noted that a “pentachordal invariance” can be observed between adjacent prime form rows, and between adjacent inverted rows. She actually has thoroughly presented all invariant considerations (even that of the dyad), and I urge you look at her dissertation if you are interested in these considerations present within this row.⁴²

The manner in which Dallapiccola is able to incorporate a feature of tonal music (the B-A-C-H motive) is fascinating. One would guess that he would include the four notes comprising this motif, side by side within the row. Such is not the case. The following diagram from the dissertation by Jacqueline Ravensbergen illustrates the manner in which Dallapiccola derives the B-A-C-H motive. One notices that the letters of Bach's name are scattered throughout the row. Even so, the letters of Bach's name are presented side by side in the score. This is due to the vertical nature of Dallapiccola's writing (which again, could be due to the influence of

⁴² Jacqueline Ravensbergen, “The Twentieth-Century Canon: an Analysis of Luigi Dallapiccola's Canonic Works From his ‘Quaderno Musicale di Annalibera’” (M.A., University of Ottawa, 2012), 13-41.

Schoenberg).⁴³ Multiple members of the row are given a single moment in time, virtually allowing any of the notes in the row to combine when realized in a contrapuntal texture.

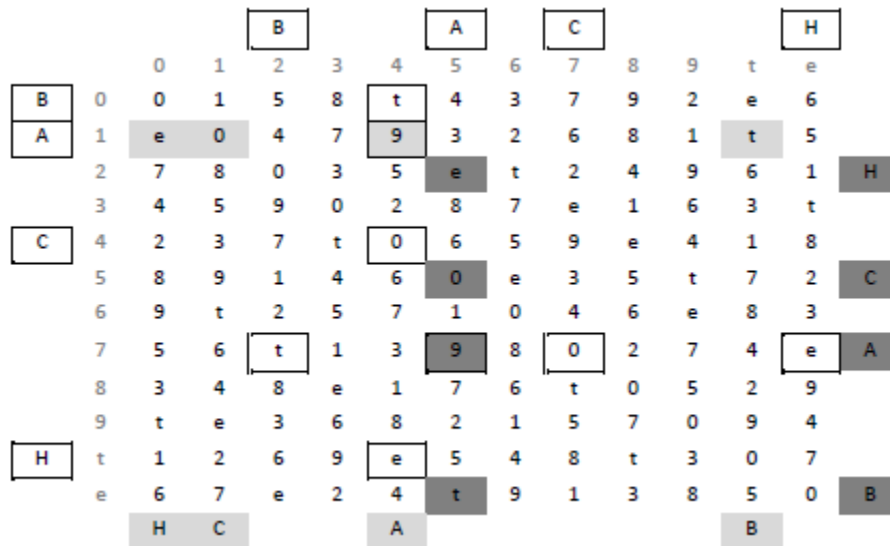


Figure 2.1c: Diagram created by Jacqueline Ravensbergen, showing Dallapiccola’s use of the B-A-C-H motive, via a 12-tone matrix⁴⁴

Sometimes dodecaphonic and/or rhythmic considerations can prove relevant to a story or message in Dallapiccola's music. One of my favorite examples comes from an opera by Dallapiccola titled *Job*. At one moment, the narrator recites a list of Job’s possessions. As each possession is read, a new member of a twelve-tone row is presented.⁴⁵ Rosemary Brown discusses works of this type in a section titled "structural symbolism." Here, she mentions another instance where Dallapiccola’s use (or misuse) of the row actually reflects the story. In the third of the *Tre Laudi*, extra notes are added at the end of a row. These added notes come from the beginning of the row. The text that accompanies this moment is translated as "receive

⁴³ Alegant, *Twelve-Tone Music of*, 11.

⁴⁴ Jacqueline Ravensbergen, “The Twentieth-Century Canon: an Analysis of Luigi Dallapiccola’s Canonic Works From his ‘Quaderno Musicale di Annalibera’” (M.A., University of Ottawa, 2012), 31.

⁴⁵ Nathan, *The Twelve-Tone*, 305.

those who wish to return." Here, one may perceive symbolism. By extending a note row to fourteen pitches and returning to notes from the beginning of the row he accomplishes a subtle allusion to the text.⁴⁶

I observed similar procedures in the tenth movement of the *Quaderno* titled "Ombre." This title translates into "Shadow." At the beginning, a p5 row is begun. The first three members of the row are displayed simultaneously, a time later (a sixteenth note to be exact), the next three members are displayed. This dual process occurs again, but in an augmented manner. Beginning at the seventeenth triplet-eighth-note of measure one, members 1-3 and 4-6 are presented as before, but under different (i.e. larger) rhythmic contexts. A similar process occurs beginning with the tenth eighth note value of measure five. However, at measures 5-6, the process (observed in measures 1-3) is reversed. Members 1-3 and 4-6 of i5 alternate with one another, slowly in measure five, and more quickly at the end of measure six. Already, this can represent "shadowing" activity. Sometimes shadows misrepresent the object blocking the light. Sometimes the shadows are larger than the object, sometimes they are smaller. As such, the pitches and rhythms repeat and vary themselves in different ways. These representations will be further clarified in the following. Indeed, these initial observations are only the first of many clever "shadows" found in this short two-page work.

The struck notes comprising measure five through the first half note value of measure eight, constitute a strange statement of i5. Measure seven contains iterations of the 7th, 8th, 9th, and 12th (?)⁴⁷ members of this row via a tetrachord partially in the high register. The 10th and 11th members are out of place, but they appear in the low register of the 8th measure in quite an obscured fashion. Beginning at the fifth (out of nine possible in 3/2) triplet-quarter value of

⁴⁶ Brown, "Continuity." 247.

⁴⁷ The twelfth member may merely constitute a lingering remnant from the initial p5 row.

measure eight, the first hexachord of i5 once again makes an appearance. One could say that a full statement of i5 is perceived from measure five to the second (of twelve) eighth-note value of measure eight, and a full statement of r11 can be perceived comprising the whole of measure eight. In any case, the pitch material comprising measures 5-8 features symmetry and overlapping of the rows, appearing something like this:

(123456)(789w)(89tew)(123456)

It appears that the row is presented in ABA form, which would mirror the overall form of the piece. That the first hexachord returns after the row has been fully stated, could represent a "shadow" of the row. Each "A" as a shadow to either side of the "B."

That row members 10 and 11 were saved until measure eight, so that the row would not be complete until the beginning of the next section, could be symbolic of shadows, especially since members 10 and 11 of the row are presented in measure eight low in the register, whereas previously they were left out of a chord that was registrally high. It's as if a light is shone from above, and members 10 and 11 are projected down low. This event is furthermore proven to be significant, both since it occurs at the transition of the A section into the B section and since the ABA form in this piece, has been called a representation of shadows as well.⁴⁸ The overlapping procedure at measure 6-8 is not observed elsewhere in the piece except at its (rough) transposition at the end of the piece (where a would-be similar effect is nullified by the lack of the structural significance perceived in measure eight). By and large, rows are assigned in a simple and organized way, once per measure. They do not overlap, and notes are not left out. That the entrance of the B section coincides with this strange partitioning of the row seems hardly unintentional.

⁴⁸ Fearn, *The Music of*, 168.

At measure twenty two, once again the penultimate chord of the row (and the piece) contains the 9th, 12th, 7th, and 8th members of the row. Once again, the 10th and the 11th members are missing. The final verticality (a dyad made of these missing tones) presents in the upper register, whereas in measure eight, the corresponding dyad was found in the low register, as pitch classes 3 and 6. This time, the light shines up from below. A registral inversion appears to occur. The two notes that comprise the dyad at the end of the piece are placed a major sixth apart, whereas in measure eight they were placed a minor third apart. The procedure itself, is a shadow or parody of what came before. Similarities and differences both abound.

To tie up all of this cleverness, Dallapiccola extends the pitches 3 and 6 from the penultimate verticality of the piece. These are in the same register as the 3 and 6 from measure eight. It seems included, as a reminder of the material that came before. Dallapiccola has included such a truly obscure and faint shadow. The iteration of pitch classes 3 and 6 (as the missing 10th and 11th members of the row from measure seven) is hidden in the dense chords, both of measure eight and in measure twenty-two. These tones are hardly perceptible, and yet they shine through when, in the final measure, the two famous pairs (of 10 and 11) are all that remain. One clearly iterated, the other barely there, but not without its effect.

At the end of the piece, members 10 and 11 of the i0 row, are presented quite clearly with a *sff* dynamic, whereas in measure eight, members 10 and 11 were obscured as a result of the thick chordal texture, and tremolos in the low register. Dallapiccola has intentionally (?) *misused* the row once again, in order to create these "shadows." If the omission of these notes initially was a problem for Dallapiccola, he was definitely able to resolve it in an aesthetic and ingenious way. One more minor *misuse* can be found at measure twenty, where pitch class 6, row member 12 lingers, overlapping with the next row. This could also constitute a simple expression of a

long shadow being cast, overlapping with other nearby objects or shadows. By a certain interpretation, this can also be perceived at measure seven which will be immediately discussed.

I have perceived that members ten and eleven are out of place. It has been brought to my attention that pitch-class 11 from measure seven could merely constitute a lingering remnant of the 12th member of the initial p5 statement, and nothing more. This simpler interpretation would somewhat nullify my observation that members 10 and 11 are out of place. This view is especially supported by the fact that the 12th member is struck after members 10 and 11 in measure eight. And although the 12th member is not struck at the end of the piece, it is sustained through the final measure. One could say that Dallapiccola capitalizes on the fact that certain prime and inversion forms (and therefore, retrograde and retrograde inversion forms) share the first and last pitch. Even given this interpretation, one could give members 10 and 11 special significance. They comprise the last struck notes of the piece, and as discussed, undergo registral and intervallic inversions.

The B section of this movement could also be called a shadow of the second movement titled "Accenti." The pitch material from the opening of the second movement is clearly presented here. A slower tempo, as well as the use of pedal and tremolos obscure this "shadow." A first time listener may not recognize this quotation. Again, it is slightly augmented, registrally skewed and obscured by tremolos in the low bass. However, listeners will probably hear something vaguely familiar. This will add to the "misterioso" effect desired. One may get almost a creepy feeling. It's important to note that this is an exact quotation with respect to pitch-class and nearly exact with respect to harmonic duration. Otherwise, no transposition or alternation has occurred. Perhaps since the "Accenti" movement could be representative of Dallapiccola's

“Violent/furioso” style, I imagine here the feelings one may have while observing the desolate landscape in the aftermath of some battle.

Section 2 Part 2: Rhythm

Elements of symmetry often show up in Dallapiccola's work. The third movement features a frequent rhythmic pattern of 2:1:1 and its retrograde 1:1:2. The first three notes of the left hand share the pitch-class-order with the first three notes of the right hand (as a canon). However, the first three notes of the dux comprise a 1:1:2 proportion, whereas the first three notes of the left hand are in a 2:1:1 proportion.⁴⁹ A third voice eventually enters, which features a rhythm that does not follow a consistent pattern.

As mentioned in section one, Dallapiccola may have intended to convey the seriousness of this work when he included the B-A-C-H motif in the first movement. Rosemary Brown writes that in many pieces, Dallapiccola may have also included his own, subtle musical signature. Brown writes that Dallapiccola frequently used the quintuplet in reference to his five-syllable name.⁵⁰

Throughout the work, and beginning with the first movement of the *Quaderno*, one can perceive many representations of the number five. Near the end of the initial B-A-C-H statement, a 5/8 meter is subtly introduced, perhaps both representing Dallapiccola, and offering the 11 of the ostinato dyad, a chance to shine as the downbeat of measure five. In measures of 5/8 (see measures 17-24) a change of sonority that occurs once per measure becomes common. Thus, the meter is easily perceived. In mm. 6-8, the B-A-C-H motive, its accompanying voices and the

⁴⁹ Brown, “Continuity.” 627.

⁵⁰ Brown, “Continuity.” 264-270.

pitches previously ascribed to the ostinato (now a vertical dyad) are organized into three groups of five.



Figure 2.2a: Movement I of the *Quaderno Musicale di Annalibera*, measures 6-9⁵¹

The right hand in measures 15-17 appears to comprise four verticalities. However, the interruption of the dyad in the bass could be interpreted as a fifth member.

Perhaps the triple rhythm of the opening and the ending could represent Bach, and groupings of five represent Dallapiccola. I have heard that Bach believed the number three to be significant. And it is noteworthy that triple meters are presented at the beginning and the end of this piece. It is also interesting that the ABA symmetry (found in "Ombres," and elsewhere) can be observed at the end of the piece. Here, the meters of the last three measures (with struck notes) comprises 3/4, 7/8 and 3/4 respectively. In actuality, the last measure with struck notes is written as 7/8, but the listener has every reason to perceive it as another measure of 3/4, since the last

⁵¹ Dallapiccola, *Quaderno*, 4.

eighth note of the penultimate measure is not struck and there is no conceivable way to "feel" this rest, (apart from listening for the release of sound occurring one eighth note later than it otherwise would in the final measure)...



Figure 2.2b: Movement I of the *Quaderno Musicale di Annalibera*, measures 15-17⁵²

Similar groupings of five can be observed in movement eight (see measures five, ten, 16-27, and their transpositions). This seems intentional, why aren't other groupings as regular and consistent? *Colore* is also a movement almost wholly in 5/8 time. "Ombre" contains an obviously out of place quintuplet in measure thirteen (that has also been noticed by Rosemary Brown).⁵³ Nowhere else in this movement can be found any thirty-second-notes, and there are only a few sixteenth notes, which can be found at the beginning of each A section. This really makes this moment stick out. At the risk of being too creative, I notice measures 2-3 of the eleventh movement. Here I have begun counting from the top note (5) to the bottom note (6), and noticed

⁵² Dallapiccola, *Quaderno*, 4.

⁵³ Brown, "Continuity." 264-270.

that there are five iterations. This occurs again in measure four starting with the first 3 at the "and" of quarter-value one. In measures seven, nine, and 10-12 similar things could be argued, but require quite flexible considerations. However, I really think that the last two measures of the piece present a good example. The penultimate measure, features five iterations of pitch class 3, followed by a unidirectional procession of five pitches spanning nearly three octaves. This unidirectional interpretation would also give weight to my observation from measures two and four.



Figure 2.2c: Movement XI of the *Quaderno Musicale di Annalibera*, measures 1-5⁵⁴



Figure 2.2d: Movement XI of the *Quaderno Musicale di Annalibera*, measures 14-18⁵⁵

⁵⁴ Dallapiccola, *Quaderno*, 18.

As mentioned before, this row features pentachordal invariance. Considering that this is a unique feature, could this constitute an incredibly cryptic signature as well? Or did Dallapiccola merely provide the row with diverse invariational attributes, which happen to include the pentachordal variety? I admit that this could be likely.

As I bring the theory-based section of my paper to a close, I can't help but bring up one more admittedly dubious observation. Often I can't help but notice a strange correlation between pitch class and order number. I noticed that pitch class numbers at times seem to coincide with their placement within the row (for example, pitch class 9 is sometimes row member 9). I would not have mentioned it, were it not for the fact that row members 10 and 11 were misplaced in movement 10 "Ombres." Strangely, I recalled the ending of the "Simbolo" movement, where *pitch classes* 10 and 11, are given prominence, and prematurely enter in measure thirty seven, grossly out of place. Pitch class 11 is also supposed to arrive before pitch class 10 via the r4 row that is presented here in "Simbolo," and doesn't. I also noticed, that pitch class 11, is the 11th member of the r4 row. *Pitch classes* 10 and 11 (here r4 members 11 and 12) are featured too early at the end of "Simbolo." Whereas, *row members* 10 and 11 are featured too late at the end of both A sections in "Ombre." Is this yet another "shadow?" Could Dallapiccola compose in such a deeply cryptic manner? I personally am not convinced. With my limited math skills, even I can see that these "coincidences" must occur many times within all possible matrices. However, I couldn't help but include this idea, since Dallapiccola possesses a genius of symbolism.

⁵⁵ Dallapiccola, *Quaderno*, 18.

Section 2 Part 3: David Huron's *Sweet Anticipation* and the "Krumhansl– Schmuckler key-estimation algorithm"⁵⁶

Musicologists have noted widely that Dallapiccola does not shy away from tonal features in his works that utilize dodecaphony. This feature can clearly be observed when one compares and contrasts Dallapiccola's music with that of Schoenberg or Webern. Triads, and seventh chords can be found in Dallapiccola's music, whereas they are not commonly found in the music of Schoenberg or Webern, if at all.

It is one thing to make this observation, but it is another to empirically test it using mathematical procedures. In David Huron's work titled *Sweet Anticipation*, a manner in which tone rows are measured by their level of correlation to tonal scales (major and minor) is described. Here, David Huron tells readers that along with Paul von Hippel, he has measured tone rows through use of the Krumhansl-Schmuckler key-estimation algorithm. His results suggest that even randomly generated rows possess a slightly higher correlation with tonality, than Schoenberg's and Webern's rows. Moreover, his findings suggest that "in general Berg's tone rows appear to be more tonal than the random controls."^{57 58}

In order to contribute new research, I undertook a procedure which I hope is similar to that described by Huron. This was done at the suggestion of, and with the gracious help of Dr. Scott Murphy, who is a professor of theory at the University of Kansas. Huron states that, "we calculated the 'tonal concentration' for each twelve-tone row by averaging the maximum key correlation for all successive pitch-class subsets."⁵⁹ Using the same algorithm cited by Huron, I

⁵⁶ David Brian Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, (Cambridge, MA: MIT, 2006), 341.

⁵⁷ Huron, *Sweet Anticipation*, 406.

⁵⁸ Huron, *Sweet Anticipation*, 339-344.

⁵⁹ Huron, *Sweet Anticipation*, 342.

applied a similar technique to Dallapiccola's row from the *Quaderno*, as well as a row from Schoenberg's *Variations for Orchestra* op. 31. Barring any human error, my result also indicated that Dallapiccola's row inherently features a significantly higher tonal concentration than Schoenberg's row. Dallapiccola's row appears to feature a 42.6% concentration, while Schoenberg's row from his op. 31 features a 34.8% concentration. The details regarding these findings are included in section 2 of the appendix to ensure that no error was made. Huron's findings can also be seen below.

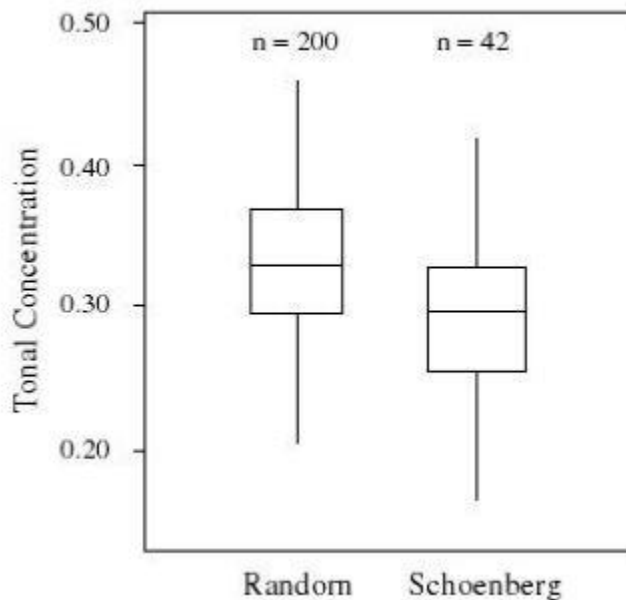


Figure 2.3: Chart Showing Findings By David Huron, of Tonal Concentration for Random rows and Rows Used by Schoenberg⁶⁰

Section 3: Musical Eras of the Past

Section 3 Part 1: Madrigalism and Text painting

⁶⁰ Huron, *Sweet Anticipation*, 342.

The list of ways in which Dallapiccola was inspired by musical eras of the past is lengthy. His early works in particular are said to contain quite a few elements of the "archaic." Roman Vlad writes:

"His early work is in fact related to the stark modal diatonicism of the middle ages and the renaissance."⁶¹

Regarding the works of his "first period of maturity" he states:

"All these works have as salient characteristics: a diatonic sobriety; a modal, archaic melos with frequent madrigalesque echoes; strict counterpoint in the movement of the parts; and a preference for typically preclassical forms."⁶²

He further states that,

"[Dallapiccola] has made a decisive and highly valid contribution to the trend whose aim is not to root out all traces of tradition, but to reaffirm its real value."⁶³

Although Dallapiccola's early period may be said to be the most heavily influenced by the past, it's important to note that this feature is a consistent attribute possessed by compositions throughout his career. I will include examples of this in the following.

Dallapiccola was inspired by Monteverdi. In her dissertation, Rosemary Brown includes numerous examples of moments in Dallapiccola's compositions that could be said to contain "madrigalisms." Although this is a feature most convincingly associated with his early career, examples of text painting can be found in pieces like *Job* and the *Canti di Liberazione*.⁶⁴

Are there examples of madrigalisms in the *Quaderno*? Well, obviously there are not. No words are included beyond those in the titles. However, I think that movements six and eleven provide music that could be influenced by a fundamental knowledge of Monteverdi and madrigalisms. Of movements in the *Quaderno* these most closely resemble melodies from

⁶¹ Vlad and Jolly, *Dallapiccola*, 3.

⁶² Vlad and Jolly, *Dallapiccola*, 4.

⁶³ Vlad and Jolly, *Dallapiccola*, 5.

⁶⁴ Brown, "Continuity." 236-238.

madrigals. The contour, rhythm, and range of these melodies make them more conducive to this kind of consideration, than others.

Pianists could give imaginary texts to these melodies that are appropriate to the exaggerations present in consideration of madrigalisms. The rising and falling melodic material from the first five measures of the “Quartina” movement could represent hills and valleys. A text appropriate for movement six could comprise a dual love poem. The first half of the piece could constitute a love poem to the day, and the second half could be a poem for the night. In measure six the text would refer to the sun rising high in the sky alongside the arching triplet quarter notes. The corresponding inverted material at measure nine could reference the sun setting low in the sky.

Fearn describes the third line of the “Quartina” as with, “almost Monteverdian repeated note palpitations.” He also ascribes this work to Verdi, due to a connection drawn between the title, the music, and Dallapiccola's interest in the “structural principles of the aria in Melodrama.” This is said to be of the poetic quatrain, in which there are four phrases, the third of which is the most excited according to Dallapiccola. As such, pianists should play the third line of this movement, in a more excited and “breathless” way.⁶⁵

Section 3 Part 2: Opera Seria

Dallapiccola was very inspired by opera from a very early age. Hans Nathan, and others, have noted operatic trends from the eighteenth century that, understandably, make their way into his music. This can be observed via his use of intervals. Nathan writes:

The distinction that Dallapiccola makes between small and large horizontal intervals can be traced back to a tradition prior to the past century. He employs seconds and thirds for

⁶⁵ Fearn, *The Music of*, 169.

lyrical passages (his appoggiaturas always have an intensely affettuoso character); also sevenths and ninths (as well as tritones) when their contours are softened by a sinuous, romantic context. On the other hand, the latter, as soon as their width becomes conspicuous through strong accentuations, are utilized for dramatic and violent passages, exactly as large intervals are in the opera seria of the 18th century.⁶⁶

Considering the above, pianists can be influenced by this observation when performing the second and eighth movements of the *Quaderno*. Measures 5-6 in “Accenti” feature high notes that are preceded by a sixteenth an octave and a semitone below. The effect on the listener, is similar to that one might experience when listening to an aria from Mozart's opera seria (such as *Idomeneo*, or moments in *Don Giovanni*) where many impassioned moments feature large leaps, preceded by a short note. This is not to suggest that one could not find similar figures elsewhere.



Figure 3.3a: Movement II of the *Quaderno Musicale di Annalibera*, measures 5-6⁶⁷



Figure 3.3b: A passage from Mozart's *Don Giovanni*⁶⁸

⁶⁶ Nathan, *The Twelve-Tone*, 296.

⁶⁷ Dallapiccola, *Quaderno*, 6.

⁶⁸ Luigi Dallapiccola, “Notes on the Statue Scene in *Don Giovanni*,” *Music Survey* 3 (1950): 90.

Also similar, is a passage from *Don Giovanni*. Dallapiccola finds this passage a particularly important moment for expressionism, which I will discuss later.⁶⁹

In the rather active movement eight “Ritmi,” I notice that there are moments where notes repeat (usually in divisions of five). When I heard this, I was reminded of moments in opera, when someone who is performing an angry recitative, may recite an entire sentence upon a single pitch. Pianists can try to perform these moments, in a very terse, strict, or angry way. Perhaps pianists could perform here slightly faster (slightly) than the surrounding material.

This movement is complex in many ways. Rows are separated into hexachords often. Exceptions to this rule are found, perhaps most notably at measure forty-one, where four different rows are presented simultaneously. Pianists can think of this moment as similar to the “stretto” common in contrapuntal Baroque pieces. Although this moment recalls the stretto, in that each row presents itself one at a time in quick succession, the fact that the row forms (two of prime, and two of inversion) differ from one another provides a substantially different (and cacophonous) result from that heard in Baroque music. Though the stretto-like nature of this passage might be able to be debated, Dallapiccola’s notation, along with the order of the pitch material, indicates that four rows are indeed presented simultaneously (many of them sharing double-stemmed pitches).

Section 3 Part 4: Dallapiccola and the Place of Dodecaphony Within Music History

As I bring this document to a close, I would like to both address some interesting ideas by Dallapiccola which tie dodecaphony to the past and, once again advocate for his music.

Dallapiccola really believed in the future of dodecaphony. He believed that it would be embraced

⁶⁹ Dallapiccola, “Statue,” 96.

fully, and in many ways he has already been shown to be right. He has written material that has really influenced my attitude regarding dodecaphony. For example, he has written that Monteverdi's "seconda prattica," may someday be seen in a historical context, as analogous to Schoenberg's "nuova logica."⁷⁰ He has stated regarding dodecaphony that:

It will find historical justification, because total chromaticism has tried many times in musical history to confine itself within a narrow space : Heinrich Jalowetz found in the finale of Mozart's Symphony in G minor a series of ten different notes (cf. "The Musical Quarterly, October 1944, *Music Survey*, December, 1950) ; Hermann Scherchen found a passage of twelve different notes in the finale of Beethoven's Ninth (cf. *Vom Wesen der Musik*, Winterthur ; English edition, trans. William Mann, Dobson, 1950) ; and I myself found a series of nine different notes in a sonata of Domenico Scarlatti, and—what is more strange—in these notes we find the whole-tone scale (cf. *Polyphonie*, No. 4, Brussels ; *La Rassegna Musicale*, April 1950 ; *Music Survey*, December, 1950).⁷¹

In an article written by Dallapiccola titled, "Notes on the Statue Scene in Don Giovanni," he also writes that he has found an early example, or "anticipation" of expressionism within the opera *Don Giovanni*. The moment of "expressionism" is apparently the result of a crescendo featuring intervals that become increasingly large and unusual. The crux of this activity constitutes Dallapiccola's example of expressionism where extremely large intervals are observed. Dallapiccola argues that, the effect achieved by these intervals would be completely lost were the intervals shortened (to a third from a tenth for example).⁷²



Figure 3.4a: A passage from a keyboard sonata by Scarlatti⁷³

⁷⁰ Dallapiccola, "On The Twelve-Note Road," 331.

⁷¹ Dallapiccola, "On The Twelve-Note Road," 331.

⁷² Dallapiccola, "Statue," 96.

⁷³ Dallapiccola, "Statue," 90.



Figure 3.4b: A passage from Mozart's *Don Giovanni*⁷⁴

Since Dallapiccola's music seems to draw inspiration from all sources, one could even say that it has more to offer than many other genres, which either avoid the possibilities offered by dodecaphony, or avoid other considerations. These "genres" that I speak of may even include pieces written by composers of the second Viennese School. One could also say that an overly inclusive style, has too much to offer, that it's confusing and does not promote ease of mind. More and more in this age of information (and misinformation), we may find in certain ways that an over-abundance of information can present problems equally pressing to those characterized by a lack thereof.

Whatever the case, Dallapiccola has really shown that his inclusive style of music really draws from the past. I almost think that, since many enjoy the "classics," and Dallapiccola has drawn his inspiration from the past, one might think that audiences of more popular genres would at least be inclined to love this music *a little*. And, although I personally appreciate all of the music of from the second Viennese school, one should not assume that all dodecaphonic composers are the same. Though I see nothing wrong with breaking away completely from tradition as an artist (in as far as this is even possible), one should keep in mind that this is not what Dallapiccola was trying to do as a Dodecaphonic composer. Roman Vlad puts it well when he states that, "[Dallapiccola] is not radically trying to eliminate or even to avoid - as Webern

⁷⁴ Dallapiccola, "Statue," 90.

does - all the elements which can in some way be connected with the tonal-harmonic system of the past."⁷⁵

Section 3 Part 5: Roman Vlad, *Volo di Notte* and Philosophical implications

When reading Roman Vlad's book about Dallapiccola,⁷⁶ one of his ideas stuck with me more than any of the others. Roman Vlad notices that Dallapiccola has re-used musical material, and furthermore that the text accompanying these instances of re-use might appear to some to differ wildly from one another. He is referring to the *Tre Laudi* and the one-act opera *Volo di Notte*. The Text of the *Tre Laudi* is taken from the "Hymns of the Madonna," whereas the text of the opera is taken from a twentieth century novel written by Antoine de Saint Exupery. Of this scenario, he initially writes:

At first sight it may seem disconcerting that Dallapiccola has had recourse to musical material originally conceived for mediaeval religious texts in order to give expression to a twentieth century text: a text about aircraft, pilots, couriers, radiotelegraphy, atmospheric conditions....⁷⁷

Though Roman Vlad presents some justification for this by referring to music from the Baroque that was reused similarly, I found most attractive, his idea that this procedure "confers a new dimension of meaning on the opera."⁷⁸ He writes that the "clearly-defined religious character" of the *Laudi* is wholly preserved in *Volo di Notte*. He writes that this observation gives a rather fascinating insight into the personality of Dallapiccola. This insight is, once again, better described by Roman Vlad. He writes:

The fact is that Dallapiccola is a profoundly religious man, who lives and feels in a religious way the whole of modern life in all its aspects, even those seemingly permeated with the crudest and most gross materialism, the most anti-spiritual technicology. After

⁷⁵ Vlad and Jolly, *Dallapiccola*, 29.

⁷⁶ Vlad and Jolly, *Dallapiccola*,.

⁷⁷ Vlad and Jolly, *Dallapiccola*, 16.

⁷⁸ Vlad and Jolly, *Dallapiccola*, 16.

all, it is those very aspects which emphasize rather than diminish the religious crisis of our day, and make it more intense and terrible. And in the last analysis, the appeal to religion, instead of ceasing to exist becomes disproportionately acute; and this because it gives rise to a series of problems which at times appear to be insoluble or to imply negative solutions.⁷⁹

Regarding the religious nature of texts and music that permeate this opera, and its relation to the characters of this opera, he writes:

It seems to voice the faculty of prayer which all these characters possess in the deepest recesses of their being, hardened as they are by the inexorable rhythm of mechanized life. Raised in secret prayer and communion with the Infinite Being, this voice frees men from slavery to matter; stops them from being reduced to sheer automatons; and preserves their individuality from becoming mere coefficients and units of a collective mass.⁸⁰

Later in his book, Roman Vlad writes of similar concepts that prove relevant to the *Canti di Prigioniera* and other works by Dallapiccola, by including a quote of Massimo Mila, in praise (I think) of Dallapiccola's *Canti di Liberazione*. Again, I find these ideas so relevant to this day and age, that I have to include them:

Few composers, really few, feel with such intensity, reinforced by the intellect, the immense tragedy of our day; the religious struggle which is being waged to the bitter end between the ideal of spiritual freedom and the brutal tyranny of matter with its inexorable determinism.⁸¹

As I read this, I was reminded of other instances in which Dallapiccola, through symbolic messages, (some more clear than others), interprets political climates and the reality of war from religious standpoints. And much has been written regarding his incorporation of religious subjects (and music) to relevant events from his life. Noteworthy examples of these topics include those related to politics, war, imprisonment, and liberation.⁸²

⁷⁹ Vlad and Jolly, *Dallapiccola*, 16.

⁸⁰ Vlad and Jolly, *Dallapiccola*, 17.

⁸¹ Vlad and Jolly, *Dallapiccola*, 21.

⁸² Peter Roderick, "The 'Day of Wrath' as Musico-Political Statement in Dallapiccola's *Canti di Prigionia*," *Contemporary Music Review* 29, no. 3 (2010):.

This discussion is fascinating in its own right, but it may also prove relevant to the topic of my document. The fact that someone like Dallapiccola, who is such a “profoundly religious” man with such deep philosophical thoughts would embrace serialization so fully, really disproves any notion that any use of this system must necessarily result in music with a “cold,” or “mechanical” effect. As such, I urge pianists not to make the mistake of treating this music inflexibly, (unless doing so symbolizes his extramusical messages).

When I read Roman Vlad’s book, I thought to myself that Dallapiccola’s appropriation of a sacred text (and corresponding music), to a novel about airplanes in the twentieth century, is itself analogous to his appropriation of tonal structures and other elements of music from the past, to the system of dodecaphony. These considerations really reveal Dallapiccola as an artist of great originality who was true to himself. With this specific example, it seems that he didn’t ask permission to view the modern world in a religious or archaic way, or to include tonal structures within dodecaphonic music. Perhaps doing so never occurred to him. If so, it’s lucky for musicians and aesthetes alike as many priceless works of art became the direct result.

Epilogue

Musicians that are wont to look for extramusical meaning will find much satisfaction in a study of Dallapiccola and his compositions. That there is much to say about these artistic manifestations is evidenced by lengthy works such as the dissertation by Rosemary Brown that comprises approximately seven hundred pages. It could be said to a certain degree that these scores are not an ideal example of what has been called “absolute” music, and I find it unlikely that even a piece written without as many direct extramusical indications, was not written in the same spirit as pieces such as *Volo di Notte* and the *Canti di Liberazione* for the reasons

previously discussed. Contrary to instances of ‘music for music’s sake,’ it seems that Dallapiccola was able to utilize music to express anything that was important to him from his real life. To me, it almost seems like Dallapiccola is one of those composers for whom music and life are so tightly connected that it could be difficult to see where one begins and the other ends. As such, I find that even a performer of the *Quaderno Musicale di Annalibera* (perhaps one of the least extramusical of his pieces) should put much thought into every note. Pianists will not have to worry about playing with great velocity, or memorizing thousands of notes here. Yet many long hours could be spent pondering this work. Its significance lies in the meaning. Virtuosity will arise when pianists use both a variety in tone color and timing as vehicles for artistic expression. And the manner of artistic expression should come naturally, once students comprehend Dallapiccola’s life experiences, including the pleasant, beautiful, religious and traumatic. The lesson to be learned from this music will be lost upon the student that focuses on playing just the notes and rhythms (although for beginning students this would be appropriate). The notes and rhythms are ingeniously constructed, but as with almost any composer, pianists will be able to put forward a more genuine performance of this piece, if he or she endeavors to understand the fundamentals of Dallapiccola’s musical world.

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Appendix

Appendix Part 1: A Comprehensive list of Rows in Dallapiccola's *Quaderno Musicale di Annalibera*

(Key: "e" = 11, "t" = 10, "i" = inversion, "p" = prime, "ri" = retrograde inversion, "r" = retrograde)

(row=te3682157094)

Simbolo

*mm.1-5 (all) ===== pt
*m.6 (all) ===== r5
*m.7 (all) ===== p5
*mm.8-9 (all) ===== re
*mm.11-14 (all) ===== i6
*m.15 (all) ===== ri6
*mm.16-17 (16th#4 of m.16-downbeat of m.17/all) === rt
*mm.17-20 (all) ===== ri4
*mm.21-24 (all) ===== r6
*m.25 (8th#2 of m.25-8th#5 of m.25 (all)) ===== p7
*m.26 (all) ===== r1
*m.27 (all) ===== p7
*m.28 (all) ===== ri
*mm.29-32 (all) ===== p7
*mm.38-42 (all) ===== r4
*mm.42-end (all) ===== p10

Accenti

*mm.1-2 (all) === p10
*mm.3-4 (all) === r5
*mm.5-6 (all) === p10
*mm.7-8 (all) === r7
*mm.9-10 (all) == p2
*mm.11-12 (all) = r5
*mm.13-14 (all) = p0
*mm.15-16 (all) = r5

Contrapunctus Primus

*mm.1-5 (m.1-4/all)(m.5/downbeat/r.h. only) ===== p11
*mm.5-9 (m.5/bottom staff/all + top staff/quarter#6)
(mm.6-8/all)
(m.9/top staff/downbeat) ===== r7

*mm.9-13 (mm.9-12=middle staff/all)
 (13=top staff/downbeat/lowest note/pc"4") ===== rt
 *mm.9-12 (m.9/bottom staff)
 (10/bottom staff/half notes #1&2&3)
 (11-12/bottom staff) ===== ri0
 *mm.9-13 (m.9=top staff/quarter note#6)
 (10=top staff/downbeat + bottom staff/8th#3 + quarter#6)
 (m.11-12/top staff/all)
 (13/middle staff/downbeat + 8th#3) ===== ri0
 *mm.13-17 (m13/downbeat/top staff/top note"2" +
 Top staff/half notes#2&3&4)
 (mm.14-15/top staff/all)
 (m.16/top staff/half notes#1&2&3 + bottom staff/quarter#6)
 (m.17/top staff/all + middle staff/all) ===== p2
 *mm.13-17 (m13/bottom staff/all +
 middle staff/quarter#6)
 (m.14-15/middle staff/all + bottom staff/all)
 (m.16/middle staff/all +
 bottom staff/half notes#1&2&3)
 (m.17/bottom staff/all) ===== it

Linee

*mm.1-9/top staff/all ===== p9
 *mm.2-9/bottom staff/all ==== i8

Contrapunctus Secundus

*mm.1-3 (mm.1-2/top staff/all)
 (m.3/top staff/8th#1&2&3&4 + 16th#6) ===== p7
 *mm.1-3 (mm.1-2/bottom staff/all)
 (m.3/bottom staff/8th#1&2&3 + 16th#4) ===== i5
 *mm.3-4 (m.3/top staff/16th#10&11&12)
 (m.4/top staff/all) ===== r9
 *mm.3-4 (m.3/bottom staff/16th#8&9&10&11)
 (m.4/bottom staff) ===== ri3
 *mm.5-7 (mm.5-6/top staff)
 (m7/top staff/8th#1&2&3 + 16th#4) ===== p10
 *mm.5-7 (mm.5-6/bottom staff)
 (m.7/bottom staff/8th#1&2&3&4 + 16th#6) ===== i8
 *mm.7-8 (m.7/bottom staff/16th#10&11&12)
 (m.8/bottom staff/all) ===== ri6

Fregi

*mm.1-4 (mm.1-3/top staff)

(m.4/triplet quarter#1&2&3) ===== pt
 *mm.3-5 (m.3/bottom staff)
 (m.4/bottom staff + top staff/triplet quarter#3)
 (m.5/bottom staff) ===== i8
 *mm.4-6 (m.4/top staff/triplet quarter#4&5&6)
 (mm.5-6/top staff) ===== re
 *mm.6-9 (m.6/16th#t)
 (mm.7-8/bottom staff)
 (m.8/top staff/8th#6)
 (m.9/bottom staff/triplet quarter#1&2&3) ===== ie
 *mm.8-10 (m8/top staff/8th#4 + 16th#t)
 (m.9/top staff)
 (m9/bottom staff/triplet quarter#3)
 (m.10/top staff) ===== p1
 *mm.9-12 (m.9/bottom staff/triplet quarter#4)
 (mm.10-12/bottom staff) ===== rit

Andantino Amoroso E Contrapunctus Tertius (Canon Cancrizans)

 *mm.-1-3 (mm.-1-1)
 (m.2/top staff/8th#3)
 (m.3/bottom staff/8th#2) ===== pt
 *mm.2-4 (m.2/top staff/16th#6)
 (mm.3-4) ===== re
 *mm.5-6 (m.5)
 (m.6/bottom staff/triplet 8th#2) ===== i3
 *mm.6-8 (m.6/top staff/8th#4)
 (m.7)
 (m.8/both staves/triplet 8th#3) ===== ri5
 *mm.8-10 (m.8/top staff/16th#12)
 (m.9/top staff)
 (m.10/top staff/8th#2&3) ===== pt
 *mm.9-11 (m. 9/bottom two staves)
 (m.10/bottom staff)
 (m.11/bottom staff/8th#2) ===== ie
 *mm.10-12 (m.10/top staff/16th#6)
 (m.11-12/top staff) ===== re
 *mm.11-12 (m.11/bottom staff/triplet 8th#8&9)
 (m.12/bottom staff) ===== ri9
 *mm.13-14 (m.13/top staff)
 (m.14/top staff/triplet 8th#2) ===== i3
 *mm.13-15 (m.13/bottom staff/all but downbeat)
 (m.14/bottom staff)
 (m.15/bottom staff/16th#2) ===== p5
 *mm.14-16 (m.14/top staff/8th#4)
 (mm.15-16/top staff)

(m.16/middle staff) ===== ri5
 *mm.15-17 (m.15/bottom staff/16th#8 + 8th#5)
 (m.16-17/bottom staff) ===== r4

Ritmi

*mm.1-5 ===== p0
 *mm.6-7 ===== i7/1st hexachord
 *mm.8-9 ===== p0/1st hexachord
 *m.10/top staff/8th#2&3&4 +
 bottom staff/8th#5/top note +
 8th#6/bottom note ===== i7/last hexachord
 *m.10/top staff/8th#5&6 +
 bottom staff/8th#5/bottom note +
 8th#6/top note ===== p0/last hexachord
 *m.11 ===== p0
 *mm.12-20 (mm.12-19/bottom staff)
 (m.20/top staff/8th#1&2) = i8
 *m.12/top staff =====pe/trichord#2
 *m.13/top staff=====i8/trichord#3
 *m.14/top staff=====p0/trichord#2
 *m.15/top staff + bottom staff=====i9/trichord#3
 *m.16/top staff=====p0/trichord#1
 *m.17/top staff=====p1/trichord#1
 *m.18/top staff=====i0/trichord#1
 *m.19/top staff=====it/trichord#1
 *mm.20-21 (m.20/8th#3&5&6)
 (m.21/8th#1&2) ===== i3/1st hexachord
 *mm.21-22 (m.21/8th#3&5&6)
 (m.22/8th#1&2) ===== pt/1st hexachord
 *mm.22-23 (m.22/8th#3&5)
 (m.23/8th#2) ===== i3/2nd hexachord
 *mm.23-24 (m.23/8th#4&6)
 (m.24/8th#2) ===== pt/2nd hexachord
 *mm.24-25 (m.24/top staff/downbeat +
 bottom staff/8th#4&5)
 (m.25/top staff) ===== p6/1st hexachord
 *mm.24-26 (m.24/top staff/quarter#3)
 (m.25/bottom staff/8th#2&3)
 (m.26/8th#1&2) ===== i0/1st hexachord
 *mm.26-27 (m.26/8th#4&5&6)
 (m.27/bottom staff/quarter#1&2 +
 top staff/8th#2/lower note"1") ===== p6/last hexachord
 *mm.27-28 (m.27/top staff/8th#2&4&6 +
 quarter#2&3)
 (m.28/downbeat) ===== i0/last hexachord

*mm.29-32 ===== p6/1st hexachord
 *m.33 = ===== i7
 *mm.34-37 ===== p6/2nd hexachord
 *mm.38-39 (m.38/8th#2&4&5)
 (m.29/bottom staff/8th#1&2) ===== i6/1st hexachord
 *mm.39-40 (m.39/top staff + bottom staff/8th#4)
 (m.40/8th#1&2) = p1/1st hexachord
 *m.40/8th#3&4 + bottom staff/8th#5 ===== i6/2nd hexachord
 *m.40/8th#5&6) = p1/2nd hexachord
 *m.41-44 (m.41/top staff + middle staff)
 (m.42/middle staff/8th#3/lowest note"7" +
 top staff/8th#4 + 8th#3/lower note"5")
 (m.43/middle staff/quarter#3 +
 top staff/8th#5/top note"0" + 8th#6/top note"4")
 (m.44/8th#2 + bottom staff/8th#3/lowest note"3") ===== p9
 *mm.41-45 (m. 41/bottom staff)
 (42/middle staff/8th#2 + quarter#2/top note"t")
 (m.43/top staff/8th#1&2)
 (m.44/middle staff/8th#3&4&5 +
 grace note in between 8th#5&6"1")
 (m.44/bottom staff/8th#6/top note"4")
 (m.45/middle staff) ===== i3
 *mm.42-45 (m.42/top staff/quarter#2/top note +
 8th#6)
 (m.43/middle staff/downbeat/highest note"9" +
 top staff/8th#5 + 8th#6/bottom note"8")
 (m.44/top staff/8th#3&5&6 + 8th#4/bottom note"e")
 (m.44/bottom staf/8th#6/bottom note"3")
 (m.45/top staff/downbeat) ===== p4
 *mm.43-45 (m.43/middle staff/8th#4&5 +
 downbeat/lowest note"e")
 (m.44/lowest staff/8th#3 + 8th#6)
 (m.44/middle staff/8th#6)
 (m.45/top staff/quarter#2&3 + bottom staff/quarter#4&5) ===== ie
 *mm.46-48 ===== ri7/1st hexachord
 *m.49 ===== pt
 *mm.50-52 ===== p6/2nd hexachord
 *m.53/triplet 8th#6&8 ===== p6/2nd hexachord
 *mm.54-57 ===== p6/1st hexachord
 *mm.58-61 (m.58)
 (m.59/bottom staff + top staff/8th#4)
 (mm.60-61) ===== p0

Colore

*mm.1-3 === pt

*mm.5-8 === r5
 *mm.9-10 == i0
 *mm.11-12 = ti
 *mm.13-19 = ri8

Ombre

*mm.1-4 ===== p5
 *mm.5-8 (m.5/8th#10)(m.6-7)
 (m.8/middle staff/8th#2/bottom note"6" + bottom staff/8th#2/top note"3") === i5
 *m.8 ===== rie (?)
 *m.8/triplet quarter#5 ===== i5/2nd hexachord
 *m.9 ===== r5
 *m.10 ===== pt
 *m.11 ===== i8
 *m.13 ===== p2
 *m.14 ===== i6
 *m.15 ===== p0
 *m.16 ===== i6
 *mm. 18-20 (mm.18-19)
 (m.20/8th#12/top note"f#") ===== p0
 *mm. 20-23 (m.20/8th#12/bottom staff +
 top staff/lowest note"7")
 (m.21-23) ===== i0

Quartina

*mm.1-5/top staff ===== it
 *mm.1-5/top staff + bottom staff ===== r7
 *mm.6-9/top staff + middle staff ===== r6
 *mm.6-9 (mm.6-9/bottom staff)(m.6/top staff/quarter#3) === ri0
 *mm.10-13/top staff ===== ri0
 *mm.10-13/bottom staff + middle staff ===== p9
 *mm.14-17/top staff ===== p0
 *mm.14-17 (mm.14-17/top staff + bottom staff)
 (m.16/top staff/downbeat) ===== i4

Appendix Part 2a: Findings of Tonal Correlation for Row used by Dallapiccola, via use of the Krumhansl-Schmuckler key-estimation algorithm

original row	sequence	major	minor	highest correlation
<te3682157094>				
or <0158t43792e6>	(te368215709			
	<0158t43792e	0.23	0.305	0.305
	<0158t43792	0.277	0.331	0.331
	<0158t4379	0.239	0.316	0.316
	<0158t437	0.195	0.446	0.446
	<0158t43	-0.42	0.275	0.275
	<0158t4	0.11	0.023	0.11
	<0158t	-0.008	0.192	0.192
	<0158	0.158	0.258	0.258
	<015	0.339	0.235	0.339
	<01	0.286	0.308	0.308
	(e3682157094			
	<047932681t5>	0.144	0.141	0.144
	<047932681t	-0.001	0.139	0.139
	<047932681	0.181	0.181	0.181
	<04793268	0.341	0.324	0.341
	<0479326	0.473	0.27	0.473
	<047932	0.593	0.435	0.593
	<04793	0.602	0.469	0.602
	<0479	0.791	0.235	0.791
	<047	0.834	0.425	0.834
	<04	0.666	0.292	0.666
	(3682157094			
	<035et24961	-0.109	-0.254	-0.109
	<035et2496	0.097	-0.047	0.097
	<035et249	0.224	0.136	0.224
	<035et24	0.19	0.279	0.279
	<035et2	0.069	0.435	0.435
	<035et	0.071	0.469	0.469
	<035e	0.241	0.547	0.547
	<035	0.354	0.685	0.685
	<03	0.304	0.831	0.831
	(682157094			
	<0287e163t	-0.256	0.384	0.384
	<0287e163	-0.069	0.41	0.41
	<0287e16	0.089	0.147	0.147
	<0287e1	0.214	0.314	0.314

	<0287e	0.385	0.469	0.469
	<0287	0.487	0.573	0.573
	<028	0.27	0.45	0.45
	<02	0.507	0.471	0.507
	(82157094			
	<0659e418	0.09	-0.33	0.09
	<0659e41	0.232	-0.355	0.232
	<0659e4	0.394	-0.201	0.394
	<0659e	0.279	-0.042	0.279
	<0659	0.376	0.039	0.376
	<065	0.383	0.212	0.383
	<06	0.337	0.281	0.337
	(2157094			
	<0e35t72	0.23	0.594	0.594
	<0e35t7	0.295	0.613	0.613
	<0e35t	0.071	0.469	0.469
	<0e35	0.241	0.547	0.547
	<0e3	0.169	0.625	0.625
	<0e	0.401	0.403	0.403
	(157094			
	<046e83	-0.006	0.252	0.252
	<046e8	0.148	0.011	0.148
	<046e	0.308	-0.03	0.308
	<046	0.427	0.057	0.427
	<04	0.666	0.293	0.666
	(57094			
	<0274e	0.651	0.267	0.651
	<0274	0.766	0.362	0.766
	<027	0.697	0.579	0.697
	<02	0.507	0.471	0.507
	(7094			
	<0529	0.511	0.189	0.511
	<052	0.529	0.375	0.529
	<05	0.615	0.473	0.615
	(094			
	<094	0.601	0.082	0.601
	<09	0.539	0.31	0.539
	(94			
	<07	0.809	0.71	0.809

total of 130 results
39.897

total of 65 higher correlations only	equation for the average of all results	when taking the higher result only
27.724	$39.897/130 = .307$	$27.724/65 = .426523077$

Finding = Findings indicate Dallapiccola's row from the *Quaderno Musicale di Annalibera* possesses a 42% tonal concentration

Appendix Part 2b: Findings of Tonal Correlation for Row used by Schoenberg (op. 31), via use of the Krumhansl-Schmuckler key-estimation algorithm

original row	sequence	major	minor	highest concentration
<t463592178e0>				
or <06857e439t12>	(t463592178e			
	<06857e439t1	0.001	0.049	0.049
	<06857e439t	0.222	0.236	0.236
	<06857e439	0.373	0.265	0.373
	<06857e43	0.318	0.399	0.399
	<06857e4	0.458	0.137	0.458
	<06857e	0.333	0.295	0.333
	<06857	0.419	0.378	0.419
	<0685	0.199	0.236	0.236
	<068	0.124	0.287	0.287
	<06	0.337	0.281	0.337
	(463592178e0			
	<02e15t93478	0.23	0.305	0.305
	<02e15t9347	0.364	0.174	0.364
	<02e15t934	0.053	-0.024	0.053
	<02e15t93	-0.077	0.148	0.148
	<02e15t9	0.081	-0.103	0.081
	<02e15t	0.056	0.045	0.056
	<02e15	0.216	0.1	0.216
	<02e1	0.141	0.132	0.141
	<02e	0.345	0.315	0.345
	<02	0.507	0.471	0.507
	(63592178e0			
	<09e3871256	0.052	0.286	0.286
	<09e387125	0.192	0.441	0.441
	<09e38712	0.091	0.433	0.433
	<09e3871	0.087	0.441	0.441
	<09e387	0.026	0.44	0.44
	<09e38	0.181	0.418	0.418
	<09e3	0.372	0.177	0.372
	<09e	0.539	0.31	0.539
	<09	0.251	0.584	0.584
	(3592178e0			
	<026et4589	0.106	-0.28	0.106

	<026et458	0.073	-0.102	0.073
	<026et45	0.216	-0.137	0.216
	<026et4	0.133	-0.109	0.133
	<026et	0.014	0.052	0.052
	<026e	0.182	0.111	0.182
	<026	0.29	0.21	0.29
	<02	0.507	0.471	0.507
	(592178e0			
	<05982367	0.301	0.466	0.466
	<0598236	0.059	0.294	0.294
	<059823	0.185	0.458	0.458
	<05982	0.342	0.22	0.342
	<0598	0.358	0.259	0.358
	<059	0.556	0.237	0.556
	<05	0.615	0.473	0.615
	(92178e0			
	<054te23	0.19	0.279	0.279
	<054te2	0.34	0.034	0.34
	<054te	0.345	0.062	0.345
	<054t	0.445	0.147	0.445
	<054	0.666	0.222	0.666
	<05	0.615	0.473	0.615
	(2178e0			
	<0e569t	0.118	-0.095	0.118
	<0e569	0.279	-0.042	0.279
	<0e56	0.267	0.112	0.267
	<0e5	0.438	0.317	0.438
	<0e	0.401	0.403	0.403
	(178e0			
	<067te	0.243	0.232	0.243
	<067t	0.339	0.325	0.339
	<067	0.55	0.415	0.55
	<06	0.337	0.281	0.337
	(78e0			
	<0135	0.15	0.472	0.472
	<013	0.07	0.544	0.544
	<01	0.286	0.308	0.308
	(8e0			
	<034	0.398	0.53	0.53
	<03	0.304	0.831	0.831
	(e0			

	<01	0.386	0.308	0.386

total of 130 results	total of 65 higher concentrations only	equation for the average of all results
33.931	22.602	$33.931/130 = 0.261$

average of highest concentrations only
$22.602/65 = 0.348$

Finding = Findings indicate Schoenberg's row from op. 31 possesses a 34.8% tonal concentration