

*The Quarta Fuga in A*  
from Paul Hindemith's *Ludus Tonalis*

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Final Analysis Essay

## Quarta Fuga

From Paul Hindemith's *Ludus Tonalis*

Born in Germany in 1895, Paul Hindemith grew up playing the violin. He attended the Hoch conservatory in Frankfurt where he studied under violinist, Adolf Rebner, conductor and composer, Bernhard Sekles, and composer, Arnold Mendelssohn, who was a relative of Felix Mendelssohn. After performing alongside Adolf Rebner as 2nd violin in the Rebner String Quartet, Hindemith formed the Amar quartet. Hindemith's own compositions received critical acclaim in the early twenties, eventually giving him several chances to meet prominent composers like Schoenberg and Webern. He consequently was exposed to the music coming out of the Second Viennese School. Hindemith worked as a professor in Germany for a time, and would travel to America to perform occasionally. In 1935 Hindemith was contracted out by the Turkish government to help improve the music education system in their country. In 1937 he wrote "The Craft of Musical Composition," an extensive catalogue of compositional and theoretical ideas. Hindemith explains the way sound vibrates in nature and the overtone series, he also provides musical examples and explanations of scale formations, techniques such as parallel harmony, the hierarchical relationships of tones and intervals, as well as cases of tertian, quartal, quintal, and secondal sonorities. After emigrating to America in 1942 and taught at Yale. He returned to Germany in 1953 where he continued to teach. He composed until his death in 1963 from pancreatitis. Hindemith's music went through several stylistic transformations over his lifetime, his early compositions sound late romantic, though he made a shift towards expressionism and atonality later. In the 20's he started writing more contrapuntal sounding music.

*Ludus Tonalis* (“Play of tones”) is a piece for piano consisting of all 12 major and all 12 minor keys, composed in 1942, soon after Hindemith moved to America. The Quarta Fuga in A, which is one of the movements, consists of many of the theoretical ideas discussed in his book, including the use of quartal and quintal sonorities as well as occasional tertian harmonies. It has the appearance of a slightly deformed Bach fugue. Hindemith actually references Bach many times throughout *Ludus Tonalis*.

### **Sound**

*Ludus Tonalis* was composed for piano, and consists of twelve Fugues and interludes. The Quarta Fuga embodies an obtuse regality, that could appropriately serve as a soundtrack to the Hans Christian Andersen story, “The Emperor's New Clothes.” It has a contrapuntal feel but intentionally breaks traditional tonal rules. Hindemith uses lines that are mostly diatonic in nature, but the harmonies that are created are far from tonal. The piece is apparently in the key of A, but the music itself does not imply any one tonal center except for an E triad and an A triad at the ends of A and A' respectively. Hindemith hints at key centers briefly but obfuscates the tonic by incorporating quartal and quintal sonorities and by simply rejecting traditional tonic focused chord progressions or melodies. There are never more than three notes played at a time. The form is A-B-A'. Though there are many factors that point to this conclusion, the stylistic, meter, and tempo changes that occur at measures 28 and 45 clearly delineate the form. The piece is played energetically at first but then changes to “slow, *grazioso*” at 28. This drastically changes to color of the piano from harsh and bold to soft and sweet. At measure 45 the original style is played again, creating a timbral contrast against the B section.

In m.14 he has a passage of parallel fourths, followed by parallel minor 7ths and a Major 2<sup>nd</sup> in m.15. He has a melodic fragment being played in parallel octaves in measure 27, and incorporates quartal

harmonies at m.35-36, as well as a quintal triad at m.47. He uses an array of minor 7th, Perfect 4th, and Perfect 5th intervals from m.51-56, and double stacked octaves moving in parallel motion at m.68-69. In the in the final measure (m.76), the double stacked octaves resolve into an A major triad (as if the piece were in A). One should also consider the chromatic nature of the piece. In spite of its close but slightly mutated relationship to traditional tonal idioms, the *Quarta fuga* has a chromatic quality, in fact, all 12 pitches are used in the first three measures of the piece.

### **Harmony**

Hindemith mostly avoids tertian, triadic harmonies in *Ludus Tonalis*, despite the fact that the pitch content is pseudo-diatonic. There are, however, several instances of clear tertian harmonies. For example, he ends the A section at m.27 with an E major triad and ends the A' section at m.76 with an A major chord, as if to jokingly state that the piece is in the key of A.

Most of the harmonic content of the piece comes from the resulting collisions of the “counterpoint,” which strangely create a plethora of perfect intervals. Occasionally, the perfect intervals will also have a major 2<sup>nd</sup> below or above one of the notes. He also uses parallel M2<sup>nd</sup>/m7th intervals and will consequently combine these with a perfect interval. He peppers in perfect intervals in m.10-26, m.52-59, and uses parallel Quartal sonorities at m.14, m.32, and m.35, and uses a quintal triad at m.47. There are several occasions where tertian triads or inversions of triads, are arpeggiated in a single voice. He uses the following tertian harmonies: E at m.27, C#- at m.28, F#- at m.30, A- at 37, F- at m.39, G7 at m.40, D- at m.47, F- at m. 51, Eb- at m.58, F- at m.60, Ab- at m.62, E- at m.63, and F- at m.64, Gb- at m.66, and A at m.76. One should also note that there are several other occasions in which extremely dissonant note combinations are used. In m.7 an Ab and an A natural are introduced underneath a G. This creates a jarring effect and highlights the re-entry of the main subject after the episodic material in measures 5 and 6. There are some strange three note sonorities that have been classified as pitch class 3-2

(013) and 3-2 (024). They appear in m.37-38, m.41 and m.43. Hindemith also incorporates several pedal points: from m.8-12 in the left hand on A, m.15-17 in the right hand on Bb, and from m.53-56 in the left hand on D.

### **Melody**

The subject is two measures long and consists of 5 pitches in the order C, D, F, Bb, C, D, A. Once reduced to C, D, F, A, Bb one can begin to see the diatonic characteristics it has. It contains pitch material from both F and Bb major. Assuming that the subject is in F, it starts on the dominant, passing through D and eventually landing on C, the dominant. However, the placement of the F on the third beat, as opposed to the first beat, reduces the feeling of arrival on the tonic. This is not simply an anticipation of the tonic. Hindemith adds a rest at beat one of the second measure of the subject. The F is then played again an octave lower on beat two (a weak beat). If one were to view see this in the key of Bb, the third would be played on the up beat of beat two in both measures, followed by the fifth on the 3<sup>rd</sup> beat of the first measure and 2<sup>nd</sup> beat of the second measure, and the tonic would be on the 'e' of the second beat of the second measure. This could be another attempt to obfuscate the key center and play with the intervallic relationships of perfect fourths. Hindemith ends the introductory subject on A, which is the key of the piece.

The main subject appears in the following keys and measures: m.1-2 in the left hand in F/Bb Major, m.3-4 in the right hand in E/A Major, m.7-8 in the left hand in F/Bb, m.19-20 in the right hand in F#/B Major, m.20-21 in the left hand in G/C Major, m.21-22 in the right and then left hand (tenor voice) in E/A major, and m.24 in the left hand in Bb/Eb Major. It also appears in A' in m.45-46 in the right hand in F/Bb, m.47-48 in the right hand in A/E, m. 51-52 in the left hand in F/Bb, m.58-59 in the right hand in

Bb/Eb, m.61-62 in the right hand in Gb/Cb, m. 66-68 in the left hand in D/G, m.69-70 in the left hand in Eb/Ab, and m.71-72 in the left hand in F/Bb.

Hindemith incorporates *fortspinnung* to develop the main subject in m.3. He sequences the last half of the subject (in m.2), which is composed of a quarter note, two eighth notes, and a quarter note. He then develops the subject with several episodes of sequenced fragments pulled from the subject and the *fortspinnung* of the subject. From m.15-17 in the left hand, this truncated-subject group appears in a descending Major 3<sup>rd</sup> sequence (these have been marked by a square). Hindemith also uses two variations of this initial fragment (pulled from m.3). The first variant has been labeled with a circle and the second variant with a triangle. At m.5, Hindemith sequences the first variant and second variants in the right and left hands, respectively, in an ascending min 3<sup>rd</sup> sequence. The first variant (circle) also appears in m.9-11, making octave leaps back and forth in the left hand. The second variant repeats three times on G in the right hand through m.15-18, and is shifted down an octave on the fourth time. In m. 27 (the end of the A Section), the initial fragment (square) also appears in its inverted form and in parallel octaves with a single voice in each hand two octaves apart. This fragment can also be seen in its inverted form in the A' section repeated three times in the left hand, as a buildup into the concluding statement from m.73-75. Inverted statements of the subject appear in: m.9-10 in the right hand in E-, m.11-12 in the right hand in B-, m.13-14 in the left hand in A-, m.18-19 in the left hand in B-, m.22-23 in the right hand in A-, and 24-25 in the right hand in F (this one is major).

In the B section, a new subject occurs in the right hand starting in m.28-29. It has slightly more defined tonality. It lasts for two measures and has 11 notes. Those notes are G#, G#, C#, E, D#, C#, B, A#, G#, F#, and E. When reduced, the notes are G#, A#, B, C#, D#, E, and F#, which is clearly pitch

material from a G# natural minor scale. The beginning of the B section subject consists of a second inversion minor triad of the subdominant. The B section subject can be seen in the following locations and keys: m.28-29 in the right hand in G#-, m.30-31 in the right hand in C#- (although the key is obscured by the *Fortspinnung* in the alto voice that uses foreign pitches like D natural). m.33-34 in the left hand in G#-, m.37-39 in the right hand in E-, and m.39-40 in the left hand in C-. The B section is also unique because of three “refrain-like” statements that parody the new subject and have a slightly different rhythm (32<sup>nd</sup> notes on the 'a' of beat 1 in the first measure, and on the '&' of beat 2 in the second). These occur in m.35-36, m.41-42, and m.43-45.

The A' section of the Quarta Fuga introduces a new countersubject to the original subject from the 'A' section. It should be noted that tonal implications made by the subject becomes even more obfuscated when combined with the countersubject. The countersubject is made up of 7 pitches. When compressed, they are F, G, Ab, Bb, C, Db, Eb, F, and G. and sound like they make up a natural minor scale since the F is the starting pitch. The subject and countersubject are played simultaneously at m.45-46 in the right and left hands respectively. The subject is in the key of F/Bb and the countersubject in in F natural minor. The presence of the Major and minor 3<sup>rd</sup> codify the feeling of tonal ambiguity. The counter subject always appears alongside the subject in the subject's parallel minor. Other occurrences of this are at m.47-48, m.51-52 (the voices are swapped), m.58-59, and again in m.66-67 with the subject in the right hand and countersubject in the left hand.. The countersubject and subject also appear in the same hand but out of phase by a measure at m.60-62. It is important to note that the inverted form of the subject is also simultaneously being played in the left hand at this same point in time.

## **Rhythm**

The rhythmic structure of the piece is rather formal and follow the traditional dactylic patterns often seen in fugal and contrapuntal writing. However, it is important to note that Hindemith places notes

that would normally be on strong beats (to indicate a tonic) on weak beats. This makes the key of the piece at any given point, extremely difficult to pinpoint. He does repeat the rhythmic theme of the subject in many forms, which is long, short, short, long or half note, quarter, quarter, half note. This pattern can be seen in a diminished form 16<sup>th</sup>, 32<sup>nd</sup>, 32<sup>nd</sup>, 8<sup>th</sup> (the 8<sup>th</sup> note is proportionally larger but can be interpenetrated as two 16<sup>th</sup> notes tied together) in the refrain of the second subject. Hindemith plays with the idea of short rhythms sandwiched in between two longer rhythms. Occasionally he will place a small rest after the first long note, but almost always groups the two short notes together.

Hindemith also interestingly restates the subject from the B section, as the countersubject in A', except with a slightly augmented rhythm. The double 32<sup>nd</sup> notes of the B section subject, become double eighth notes in the A' countersubject.

One last important thing to note, is that the starting tempo is half note = 108 in 3/2 meter. The meter and tempo changes to ♩ at a quarter note = 63. This change clearly delineates the B from the A section. The piece returns to the original tempo and meter at m.45, marking the starting point of the A' section.

## **Growth**

The piece follows a very traditional energy curve. It basically moves from, bold, energetic, and majorish A section, to mellow, slow, and minorish B section (at m.28), back to an even more intense A' section. The piece starts *forte* and Hindemith indicates that it should be played energetically at a tempo of half note = 108. At m.9 the dynamic mark is *piano* there is a crescendo at m.12 to a *mezzo forte* and then drops to *piano* again at m.15. It crescendos through the descending major 3<sup>rd</sup> sequence and a *forte* at m.18, the start of the first *stretto*. These swells contrast the developmental material that occurs between m.9-17. The *stretto* remains *forte* until its end, where Hindemith kindly places another *forte* mark at m.24. This is followed by an *allargando* and *fortissimo* marking leading into the first A section's final measure (m.27).

The energy drastically drops at m.28 at the start of the B section. The dynamic marking is *pianissimo*, and the tempo is a bit slower than the A section. There are swells at m.30-32 that really highlight the *fortspinnung* in the right hand. The dynamics are *mezzo piano* at m.34, but drop to *pianissimo* at m.35 through the quartal sonorities. The final subject-answer group that occurs in the B section at m.37-40 is brought out by a swell starting *piano* at m.37, and reaches *forte* at m.39 (the start of the answer). It then decreases volume to *pianissimo* at m.41. It is *mezzo piano* at m.43, and then *pianissimo* again to conclude the B section.

The final A section, or A (at m.45)', is in the original tempo and starts with a *forte* dynamic mark. There is a decrescendo at m.52 to *mezzo forte* at m.53 where the inverted subject plays.

There is another decrescendo at m.56 into the final episode. The dynamics jump up to *forte* at m.58 during the restatement of the subject and countersubject. There is a crescendo through the parallel octave passage in m.68 into a *fortissimo* in m.69, which is where the subject/inverted subjects begin the rally to the finish. There is a final *allargando* at m.73 that lasts until the finish at 76, and brings the energy of the piece to a close.

## Form

As has been stated earlier, the Quarta Fuga resembles a mutant relative of a Baroque fugue in the style of Bach. It begins with a subject in m.1-2 (although the key is ambiguous), and has an answer in m.3-4 in a new key. Hindemith introduces episodic material within the *fortspinnung* that occurs in m.2. The piece contains episodic material in the form of sequences of variations of the subject material in m.5-7. At m.9 the inverted form of the subject is introduced and can be interpreted as the countersubject

of the A' section. The instances of the inverted subject are developmental and occur three times between m.9-14. There is another episodic sequence from m.15-17 in the left hand. The stretto of the subject begins at m.18 and has overlapping subject/inverted subject groups until m.25. This concludes the exposition of the fugue.

The 'B' section contains an entirely new subject starting at m.28-29 that is answered in m.30-31. The answer is played over fragments derived from the *fortspinnung* of the new subject. This sequence transitions into an episode in m.32. The subject appears again at m.33. What would normally be the countersubject can be viewed as more of a refrain of the subject in and answers the subject at m.35. The B section ends with subject in G#- (m.37-38), subject in C- (m.39-40), and refrain repeated twice in G# minor).

The original subject appears in the right hand at m.45 in conjunction with the countersubject in the left hand. Again, the key becomes blur between major and minor when these two themes are played together. Both the subject and countersubject are answered at m.47-48 in the same hands but up a minor third. It is important to note that the answers that Hindemith employs throughout the piece modulate keys in a very non traditional way. Bach would normally answer the subject in the dominant or subdominant, not the mediant. There is an episodic sequence that occurs at m.49-50 that pulls from material presented in the A' countersubject. The subject and countersubject occur again at m.51 in both hands, and are answered by the inversion of the subject at m.53-54 in A natural minor, and again at m.55-56 in E natural minor all over a pedal on D. These four measures are developmental. After a brief measure of episodic material at m.57, the subject and countersubject come in again at m.58-59. The final stretto begins at m.50 and starts with the countermelody in the right hand, and the inverted subject in the left. The subject enters

in the soprano voice at m.61. This is the first point in which the subject, countersubject, and inverted subject are played simultaneously. The countersubject comes in two more times at m.62-64 in the left hand, and at m.63-65 in the right hand. The subject joins one last time in the tenor voice at m.62. The last instance of the subject and countersubject being played simultaneously occurs at m.66-67. At m.69-70, the subject is played with the inverted subject in the keys of Eb/Ab and Bb respectively, and again with the subject and the inverted subject in F/Bb. This creates a centering feeling, as if the two voices are working together yet still not entirely defined. Thematic material from the subject repeated three times in the bass (the third time with perfect intervals at the end). This creates the feeling like the piece is coming to a close. The final statement at m.76 is played in double-stacked octaves and uses the thematic material of the inverted subject.

### **Concluding Thoughts**

The Quarta Fuga portion of Hindemith's *Ludus Tonalis* greatly resembles the fugues of Bach, with a few obvious exceptions. The music exhibits feeling of humor, and humility, almost as if Hindemith was poking fun of the traditional contrapuntal rules, but ironically holding to many formal aspects similar to composers like Bach.

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# Key

 = Non-Tertian Sonorities

 = Tertian Chords

 = Perfect Interval

 = 7th Interval

 = Fortspinnung

 = Refrain

 = Subject/Answer of Subject

 = Derived from subject

 = Inverted Subject

 = Countersubject/Answer of Countersubject

 = Derived from Countersubject

 = Pedal

 = Stretto

 = derived from Inverted Subject

The upper portion of the page contains four staves of musical notation, which are crossed out with a large, dark diagonal line. The notation includes various musical symbols such as notes, rests, and dynamic markings: *mf*, *p*, *mp*, and *pp*.

Fuga  
quarta  
in A

With energy (♩ 108)

This section shows the musical notation for the 'Subject' of the fugue. It features several handwritten annotations in orange and green ink:

- Subject:** A handwritten label in orange with a curved arrow pointing to the first measure of the subject.
- E/A Maj. Answer:** A handwritten label in orange with a curved arrow pointing to the second measure of the subject.
- F/B<sup>b</sup> Maj.:** A handwritten label in orange with an arrow pointing to the first measure of the subject.
- Fortspinnung:** A handwritten label in green with a dashed green box around the second and third measures of the subject, and arrows pointing to the notes in these measures.

Below the notation, there are three hand-drawn shapes: an orange square, an orange circle, and an orange triangle, each with an arrow pointing down to a specific note in the subject.

Ascending min 3rd Sequence

Emin 17

5  
L (Episode)  
F/B<sup>b</sup> Maj.  
A pedal

10  
Bmin  
Parallel min 7<sup>ths</sup>/Maj 2<sup>nds</sup>  
Parallel 4<sup>ths</sup>  
mf  
Amin.  
(A pedal)

15  
B<sup>b</sup> pedal  
Stretto  
Descending Maj 3<sup>rd</sup> Sequence  
Bmin

19  
F<sup>#</sup>/B Maj  
(stretto)  
Amin  
E/A Maj  
G/C Maj

23  
(End of stretto)  
parallel 4<sup>ths</sup>  
F Maj Alt.  
parallel 4<sup>ths</sup>  
Parallel 8<sup>ves</sup>  
allargando  
ff  
(Inverted)  
EMajor

B<sup>b</sup>/E<sup>b</sup> Maj

Slow, grazioso (ca. 63)

# New Subject

**F-Triad**  
**Answer**

28

pp

# Fortspinnung (descending m3rds) Episode

31

**F-Triad**

thematic transformation

**Quartal Harmony**

34

Fortspinnung of the Fortspinnung

mp

pp

Refrain

**A-Min Triad**

3-2

3-2

3-6

37

p

mf

**F-Triad**

41

pp

mp

pp

Refrain

refrain

3-6

3-6

45 **Tempo primo** **subject** ( ) **Quintal Triad Answer**

**CS-Answer**  
F Natural Minor Scale

49 **Sequence on Countersubject**

**Episode**

53 **A Natural Minor** **E Natural Minor**

**pedal on D**

57 **Bb Major scale** **Bb Natural Minor** **Eb Triad** **Stretto** **C Nat. min.**

**Episode**

61 **Gb/Cb** **E** **C Natural minor...** **Amin Triad** **F**

**Episode**

20  
65

*G<sup>b</sup>* D Natural Minor

Stacked Octaves

(c Nat. Minor)

69 B<sup>b</sup> Major

73

*allargando*

Fast (♩ 144)  
*legato*

All inverted

Interludium

*p*