3 Sketches (Hofmann-Engl, 2016)

An Analysis

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Abstract

This composition comprises one sketch for flute solo, for trumpet solo and guitar solo with each of these of the length of about 1 to 2 minutes. While each piece is written to suit each instrument, they have in common elements of self-similarity, melodic as well as rhythmic development, virtual tonalities and harmonic or latent harmonic structure (arpeggios) which itself is based upon modern concepts of virtual pitch and pitch salience. Both concepts, the concept of melodic similarity as well as the concept of virtual pitch have been used to uncover the structure of these three pieces, which in return then can be understood as instances of an underlying compositional principal or isomorphism. Finally, based on this structural analysis a hermeneutic interpretation will be presented which is a clear plead for individuality within a common framework of life affirmative standing.

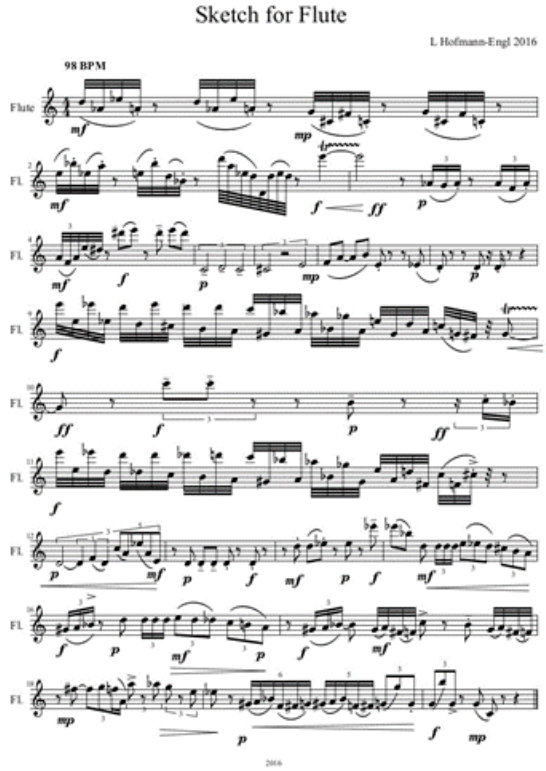
1. Background

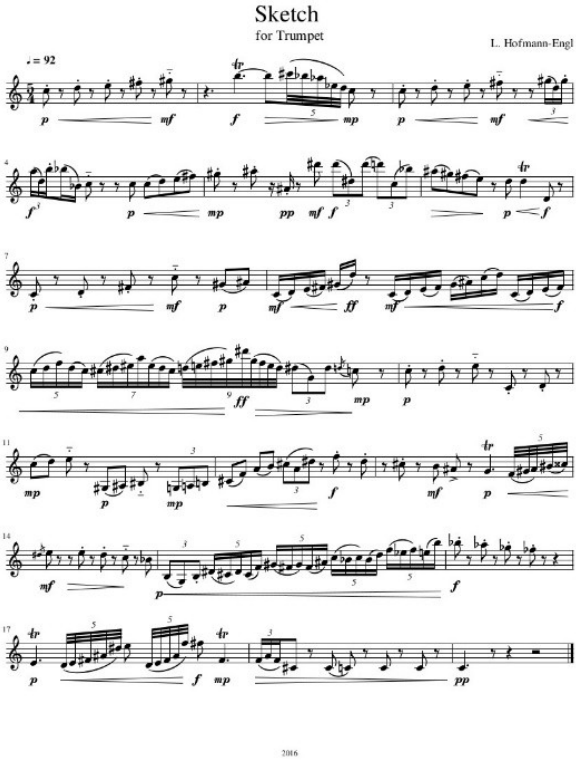
This composition was written in 2016 in three consecutive stages. Sketch for flute solo was written in response to the call for pieces by the flutist Iwona Glinka in summer 2016. The piece was accepted for performance and CD recording, but the composer withdrew his submission after Glinka failed to arrange a meeting for the composer to supervise a rehearsal. The piece was then recorded and placed on YouTube by the flutist Robin Meiksins in June 2017 as part of her 365 days' project. Following the call by Kate Amrine for a piece for trumpet, sketch for trumpet solo was written in autumn 2016, but the submission was dismissed because the composer did not dedicate the composition to Amrine. Finally, the composer, decided to write sketch for guitar in order to combine the three pieces into one composition in winter 2016.

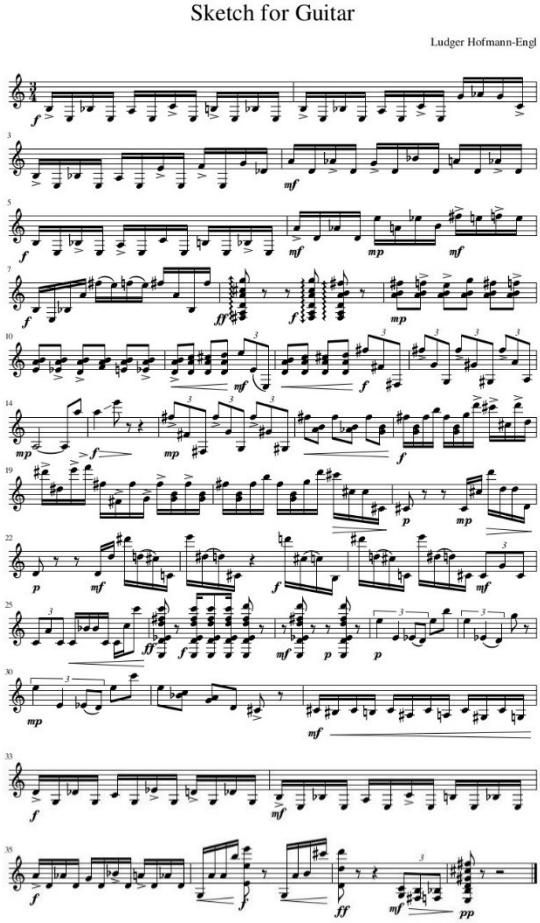
2. Analytical Tools

In order to analyze the three pieces, the author will make use of motivic analysis in the sense of Reti (1961) and Nattiez (1982) supported by concepts of melodic similarity. Not dissimilar to Hofmann-Engl's (1989) analysis of Ligeti's Passacaglia ungherese, he will also scan the composition for central tones and pitch distributions (virtual tonality). While the pieces for flute and trumpet display at time latent harmonic passages only, the guitar piece contains poly-chords making a harmonic analysis (not dissimilar to Hofmann-Engl's (2004) analysis of Szymanowski's Ettude 33.6) including pitch salience possible. A rhythmic/chronotonic analysis similar to Guastavino et al (2009) will be particularly helpful when dealing with the sketch for trumpet.

3. The 3 Sketches







3 Sketches (L Hofmann-Engl, 2016)

1 for flute, 1 for trumpet & 1 for guitar

marks: quarter = 94, quarter = 92, quarter = 120

5. Pitch Distribution and Minor/Major Closeness

Hofmann-Engl (1988) established a method which can help to analyze how close a composition is to a tonal key. A simplified version of this method counts the pitch classes of a composition and adds up all notes for c-major (*c, d, e, f, g, a, b*), *c#*-major (*c#, d#, e#, f#, g#, a#, b#*) and so on and plots these twelve sums against the keys ordered by closeness, that is: *c, g, d, a, e* and so on. Now, in case we are dealing with a tonal piece let us say in a-major, we will see a maximum at the sum for *a*-major and a minimum at the sum for *g#*-major. If a piece is atonal, we will see no such peaks, but a more or less straight horizontal line.

In the case of the three sketches, we obtain the following graphs:

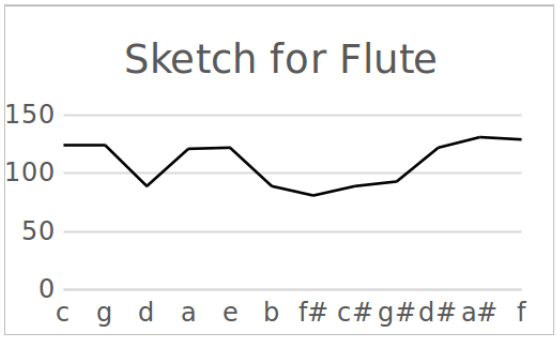


Figure 1: Sum of matching pitch classes ordered by key closeness for sketch for flute

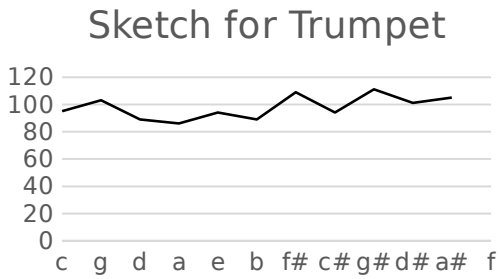


Figure 2: Sum of matching pitch classes ordered by key closeness for sketch for trumpet

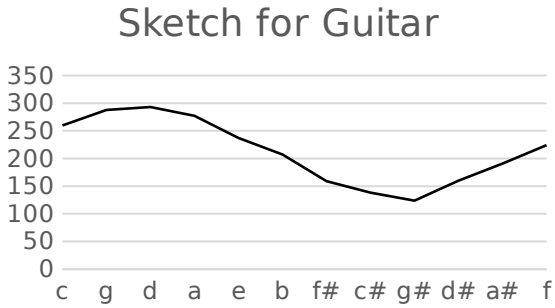


Figure 3: Sum of matching pitch classes ordered by key closeness for sketch for guitar

Here we find that sketch for trumpet cannot be mapped into the tonal space of a key and this is true to a lesser degree for the sketch for flute which shows some smaller peaks for keys around *c, g, a#, a* and *f*. However, sketch for guitar follows the typical key distribution with d-major as the peak. The reason for this is not based on the fact that sketch for guitar is in *d*-major, but the result of making extensive use of the open strings. However, as we will see, d is certainly the central pitch for this piece with *a* and *g* as sub-central pitches.

6.Virtual Pitch Analysis

6.1. Sketch for Flute

As we are dealing with a monophonic piece, a harmonic analysis is by and large uncalled for except for bar 9 and bar 11 where we encounter a 2 parts latent polyphony. Grouping the sequences into intervals of (2*n*-1, *n*=1) we obtain the following graphs:

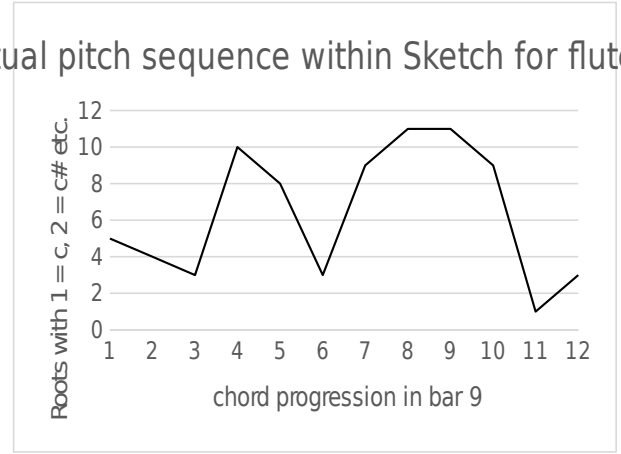


Figure 4: Graph after grouping the sequence into intervals of (2*n*-1, *n*+1) for the first 3 ½ beats of bar 9

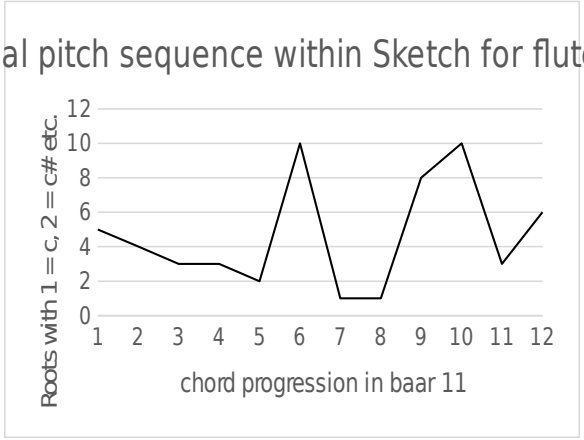


Figure 5: Graph after grouping the sequence into intervals of (2n-1, n+1) for the first 3 beats of bar11

These two passages are of central importance to the piece as the main motive *g, a, f#, f* emerges. We might want to note that both harmonic lines are displaying the same contour with bar 11 exhibiting sharpened peaks.

6.2. Sketch for Trumpet

Again, sketch for trumpet is a monophonic composition rendering a harmonic analysis meaningless except at points where a melodic line can be interpreted as an arpeggio. This is the case for bar 2, bar 13 and twice in bar 17. Simply, inputting these arpeggios into the harmony analyzer applet at http://www.chameleongroup.org.uk/software/piano.html, we obtain the virtual pitch (root) and pitch for bar 1 to be *g#*, for bar 13 to be *d* and for bar 17 first *e* followed by *d*. Now, while the central pitch of the piece is *c*, the melodic structure is based on a whole tone scale whereby *d* and *g#* are somewhat the poles between which the melodic lines oscillate. In this sense, the arpeggios are strengthening these poles.

6.3. Sketch for Guitar

Sketch for guitar offers the opportunity for a more comprehensive harmonic analysis based on virtual pitch. Particularly bar 8 to bar 14 are of interest as they contain a number of poly-chords. Again, entering the data into harmony analyzer, we obtain the following graph:

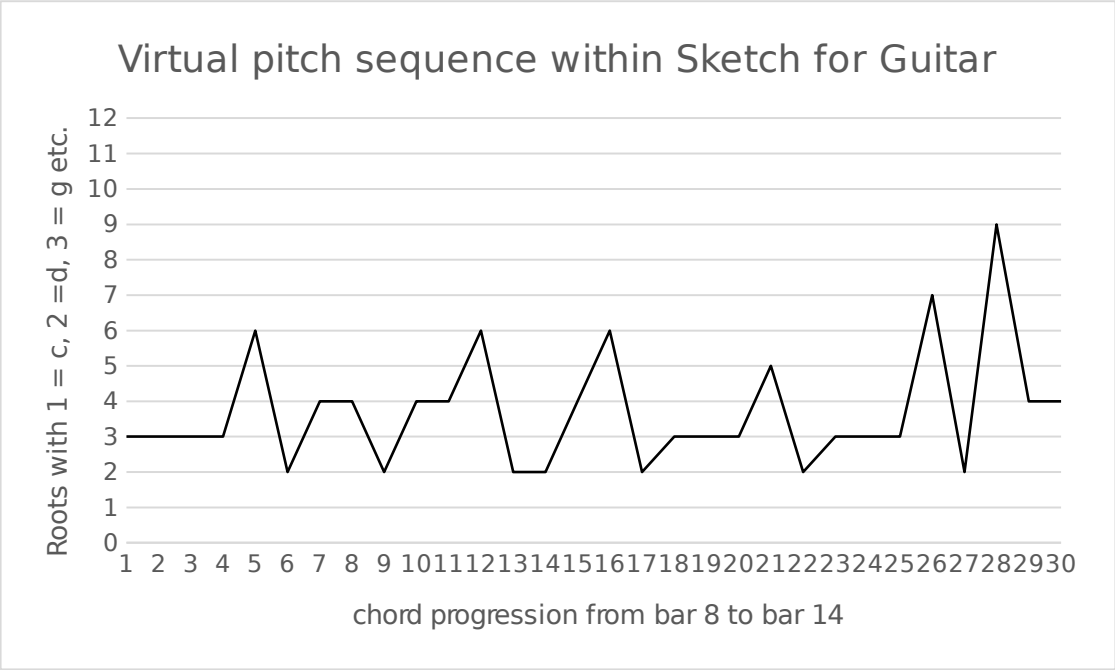


Figure 6: Graph showing the harmonic (root) progression for bar 8 to 14 whereby the arpeggios in bars 11, 12, 13 have been interpreted as chords. Note, the roots are ordered according to the circle of fifth.

Here, we can see that the root d (tonic) is central with harmonic changes frequently involving either a (the dominant) or g (the sub-dominant). This further confirms the latent tonal character of the piece.

7. Similarity and motivic analysis

7.1. Sketch for flute

As mentioned above, the central motive for sketch for flute is: *g – a – f# - f,* which appears twice in bar 17.

Now, ignoring the first note of the opening in bar 1, we get the three notes a^b – e^b – a^b. We further interpret the following rest as another ab referring to the concept of echoic memory. We then apply the same method to the 2nd, 3rd and 4th group of notes in bar 1, then to the two triplets in bar 3, to the last three 32th notes in bar 4 and to the last three notes of the same bar, to the 4 next notes from bar 5 to 6 and finally to the notes *a, b* and *e* in bar 7. In bar 9 and 11, the motive appears in the second part of the latent polyphony. A final variant of the motive appears in bar 19 within the sextuplets (2nd to 5th note respectively). Utilizing the melotonic similarity measure applet as found at

http://www.chameleongroup.org.uk/software/mel_sim.html

we obtain the similarity graph as given below:

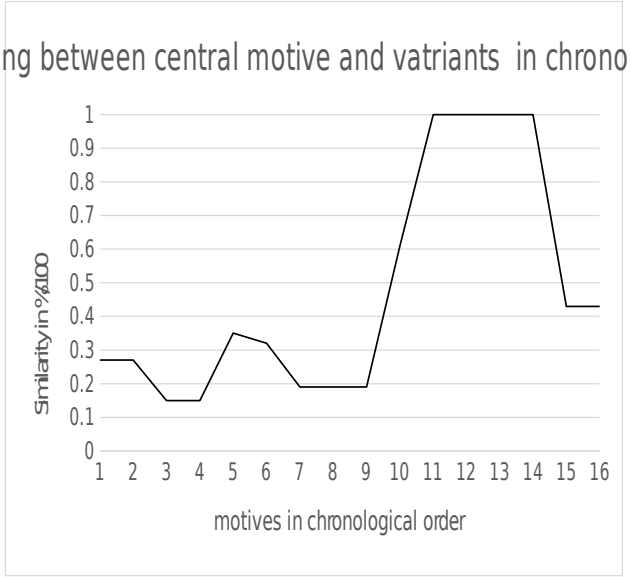


Figure 7: Similarity ratings between the motive *g – a - f# - f* and its variants within sketch for flute.

Taking into account that variant 11 and 12 are the 2nd part of a latent polyphonic line, will reduce their real similarity to the motive to something below 100% implying that the motive is the result of a development which then itself “fades out”.

7.2. Sketch for Trumpet

Sketch for trumpet is largely developed around ascending and descending whole tone scales so that a motivic analysis would reveal little more about the piece. However, we can use the concept of chronotonic similarity to describe the “speeding up” from bar 8 to bar 9. Here, we have 3 x 4 eights notes followed by a quintuplet, a septuplet and a nonuplet. Now, we calculate now the chronotonic (rhythmic) similarity between each consecutive group and then the similarity between the eights notes and the noutuplet using the chrontonic similarity applet at

http://www.chameleongroup.org.uk/software/chron_sim.html

We obtain the similarities: 1, 1, 0,996, 0,993, 0,997 and for the overall similarity (from beginning to end) of 0.686. Clearly, while the speed changes in small steps only (around 7%) the overall change with 34% is quite significant.

A second aspect about sketch for trumpet, which is of interest, is the rhythmic density. Here, we simply count the number of notes per bar and plot these numbers in chronological order. We obtain:

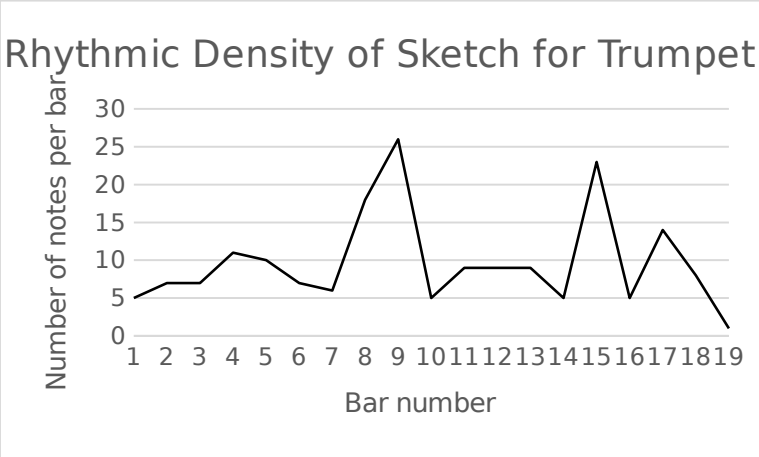


Figure 8: Rhythmic density is the count of notes per bar plotted along all bars.

As we can see, there are three peaks in rhythmic density indicating that rhythmic density (the contrast between fast and slow passages) can be regarded as a structural element of this composition.

7.3. Sketch for Guitar

This sketch consists of 3 passages composed of sixteenths notes interrupted by two chordal/melodic passages. Interpreting the e in the opening as a pedal note, we obtain the melodic line of b – b^b – a – c – b – b^b for the first bar. That is two trichords each chromatically descending.

Incidentally, this passage contains the famous *BACH*. This motive is the backbone of this sketch whereby this trichord gets shortened or extended and inverted and transposed.

We observed earlier that this sketch is close to a major key both in terms of its pitch class distribution as well as its harmonic structure. However, the chromatic melodic lines, which are not even centered around *d* make an interpretation of this piece as a *d*-major (or *b*-minor) composition an inadequate option and we assert here that the closeness to a key is the result of using open strings.

8. Hermeneutic Interpretation

Before we discuss the composition on a hermeneutic level, it is important to point out that structural difference within the three pieces derives not just from the usage of different motivic material, but from the characteristics of the instruments. The flute piece profits from the flexibility of the flute in terms of quick sound production time and agility in reference to larger intervals. The composition for trumpet incorporates mostly smaller intervals and gives the player plenty of rests and space for the instrument's reverberating sound. In relation to the guitar piece, we have already referred to the open strings.

While each piece is, as we have seen, based on a different motive, the transformation of theses motives involves at times just simple inversion or transposition, but exceeds these tools where the concept of similarity becomes relevant. We also have seen that a description in traditional keys would be inadequate and that harmonic structure require the implementation of virtual pitch. So we can claim that three individual motives undergo the same (isomorph) compositional process. The buildup of climaxes and progressive development through similarities seem to be in accordance with how we see ourselves and the world around us in aesthetic terms and hence can be labeled as being life affirmative.

9. Conclusion

Applying a number of contemporary analytical tools to the composition *3 sketches*, revealed that instrumental characteristics have been considered as well as individual different motives deployed. On this basis then the compositions unfold by implementing the same compositional principles leading to structures which cannot be described within simplistic symmetrical terms but relaying on concepts of similarity and virtual pitch, generating structures, which we considered to be life affirmative.

References

Guastavino, C., Gómez, F., Toussaint, G. T., Marandola, F., & Gómez, E. (2009). Measuring Similarity Between Flamenco Rhythmic Patterns. Journal of New Music Research 38. 2, 129 – 138.

Hofmann-Engl, L. (1989). Ligetis Passacaglia ungherese – eine Analyse. M65, Berlin

Hofmann-Engl, L. (2004). Virtual pitch and its application to contemporary harmony analysis. Retrieved 15.09.2017 from:

http://www.chameleongroup.org.uk/research/link_virtual_analysis.html

Reti, R. (1961).The thematic process in music. Faber & Faber

Nattiez, J-J & Barry. A. (1982). Varese's 'Density 21.5': A Study in Semiological Analysis. Music Analysis 1. 3, 243-340