Magnus Lindberg: *Corrente*

Magnus Lindberg belongs to the second generation of spectral composers, and follows a more eclectic approach that combines spectral harmonies with more intricate rhythmic processes, formal complexity and collage techniques, as well as elements of the Finnish tradition, mainly echoes of Sibelius, that synthesize a highly personal style. His work at IRCAM also influenced his style by providing him with tools of great capacity to explore material, and filter it through specific transformations. Works that are evident of his emerging personal compositional voice in the 80's are Kraft (1985), UR (1986), & Joy (1989-90).

The main feature of these works (and his style in general) is what Lindberg calls the 'principle of chaconne'- a chain of chords which is recycled continuously through a piece in many different ways. Also, a fascination with the organization of time, duration and rhythm. Preoccupied with processes of rhythmic transformation, of interpolating continuously from one rhythmic ostinato to another; in this he has been much aided by his work with computers. Another recurring feature is the transformation into and back out of passages of maximum rhythmic simplicity. The concern of the music is not so much to present material as to show the relation between different types of material.

After the richly consonant, almost tonal harmonies of *Joy*, Lindberg once again felt himself at an impasse. He says "I felt I could go no further in that direction-the next step would really be Hollywood!" So he shifted his attention away from the primarily harmonic world of the previous few years toward a more restricted palette, whose main constituents are scale and mode on the harmonic plane, and overlapping loops on the rhythmic plane. As ever with Lindberg, the danger of absolutely mechanical repetition is avoided by the subtly shifting overlay of the ostinati, as well as the gradual changes within them, producing a shimmering continuum of perpetually renewing polyrhythms which float across the music's delicate surface; this is the style first adumbrated in the *Piano Concerto No. 1*, now fully evident in *Corrente*.

Corrente was composed in 1991-92, as a commission from Svenska Litteratursällskapet (Swedish Literary Society of Finland) for its annual festival, and was first performed at the University of Helsinki in February 1992. It is written for large chamber ensemble, and in the same year (1992) it was reworked twice: first into a version for clarinet, guitar, vibes, piano and cello, titled *Decorrente*, for the *Toimit ensemble* and later into an orchestra piece titled *Corrente II,* commissioned by the BBC for the festival of Nordic music *Tender is the North.* The title is a typical Lindberg pun: the characteristics of the Baroque dance of that name may be seen, according to the composer, "as the tip of the iceberg" of the work's musical material. In fact, one harmonic sequence in the middle of the piece alludes to Purcell's *Funeral Music for Queen Mary*. The baroque form is a fast, triple metered dance with a himeola at the end. It also means: running, flowing in Italian. The composer says he is attracted by the ornate qualities of the baroque, if not rococo. Not weighty baroque, but by that " lightness of ornamentation, of embroidery", very much like the "ornamentation on oriental carpets."

This work was pre-composed using a program called *Situation* library, developed at IRCAM, and adapted by the composer into a personal composing tool that allows him to plan out specific musical elements over time independently by entering parameters and subsequently adjusting them individually to suit his own preferences, while retaining the overall plan. The composer states that in this piece he 'abandons the articulation of music via instrumental gestures and turns toward continuums'. In fact, the whole piece is a constant shift between continuums that smoothly shift into one another. The rhythmic material is based on patterns with a kaleidoscopic approach to repetition and variation. In order for rhythm and harmony to come closer, harmony is constructed on different aggregates of modes, with a strong connection to spectral thinking, as well as harmonic tension and release between sonorities that strongly alludes to tonality, and even 'tonal quotations' per se. "By combining these pattern figures and scale aggregates, I wanted to give the musical expression a 'narrative' sense of directions moving around in different orchestral constellations," says Lindberg.

The building blocks of the piece are a B-F tritone in the low register, and a descending harmonic minor gesture. These two generate both harmony and rhythm with

endless transformations that retain their intervalic content, but also put them through spectral and 'tonal' prisms. The B-F tritone is explored as a bi-polar compound in two ways. One is a spectral way, in which partials of both notes are added, some times together, sometimes separately. The other is through its 'tonal' pull to both C and Gb. It is also used to generate octatonic scale aggregates that are incorporated into the texture and used to generate ostinato passages as a distinct intervalic area separate from the harmonic minor world. The octatonic scale controls the large-scale harmonic areas, which are all the notes of the one that excludes pitches B-F, namely: [E, F#, G, A, Bb, C, Db, Eb,]. The harmonic minor collections control the small scale, measure to measure pitch material, and appear more static, focusing on the lower five pitches of the harmonic minor scale that give it its distinctive character.

Even though the composer states that he abandons instrumental gestures, at least as a form-generating device, *Corrente* owes much of its character to one specific gesture, or one type of gesture, to be more precise. That is the descending scale figure that is usually constructed out of harmonic minor scale degrees, but sometimes borrows notes from the octatonic scale that the composer uses to generate the pitch areas of the large scale form, or closed-spaced upper partials of a certain fundamental, or even arpeggiated figures of an underlying harmony. This gesture appears also as an ascending figure, an inversion of sorts, and is very important in its role as generating material for the continuums.

Large-Scale Formal Plan

A glance at the attached tempo map gives us a good idea of how the piece is designed. It consists of three large sections, with the middle one (mm. 74-110) in faster tempo, and the ones on either side of it identified by a gradual ritardando. There is an introduction (mm. 1-34) at a slow tempo, and also a sort of Coda, that reflects the intro gesturally, even though the slowness of it is achieved by augmenting values, and not a slowing of tempo. Also, within sections there are interruptions of faster tempo sections, beginning at the faster middle section. The third section is reached via a transition that slows the tempo down (mm. 111-114).

These tempo relationships are not necessarily perceptible however, because the composer has done everything possible to blur the transitions. This is achieved by using the continuums to alter the perception of rate of movement. So, within each section there are several swells in density of texture and pitches per unit of time, and the overall form would look like a sound envelope, very much like the way Gerard Grisey designed his pieces, and another feature Lindberg inherited from the spectral school. His own addition is that tempi, texture and harmony are controlled independently. This is achieved by the computer aiding pre-composition, so that each parameter can unfold on its own in a very precise way.

Large-scale Harmonic Scheme

(See attached harmonic reduction for measure references)

The opening tritone B-F, which I'll call the 'tonic 'tritone, borrowing the term from tonality as one that signifies home, stability and outlines the formal plan of a piece. This tritone fulfills such functions. It outlines the piece formally, with 3 emphatic repetitions at the beginning and at the ending, it outlines sections of increased/decreased density throughout the piece, and it generates the harmonic world, and on the surface level is distinctly recognizable whenever it appears.

At m. 4, we see the first spectral handling of the tonic tritone. The pitches B and F are treated as the 4th partials (2 8ves above fundamental) of generating frequencies that are below the range of human hearing. He also adds Eb and A, which reinforce the spectra of the fundamentals as partials 5 and 7 ([2 8ves+] major 3rd, & b 7th), of both pitches, since they're a tritone apart. Db fits in as partial no: 9([2 8ves +]ma 9th) of B, and partial no:11 ([3 8ves +] #4th) of F.

In m. 5 we get a momentary (lasting an eighth-note) diversion with a new set of high partials, built on another two notes (E-Bb) that share a tritone relation, and are a half-step below the 'tonic' tritone, in the same register. We get partials: 4,7,8,9,10,11,12,15,16 for E, and 4,8,9,10,11,12,14,24,26 for Bb. A quintuplet gesture in the piano, made up of partials of the original tritone (5, 6 for F, and 5,7,9 for B) pulls us

upward back to the 'tonic'. One could explain the spacing of partials in this measure as inverted spectra, as used by Gerard Grisey. These are usually used with more inharmonic partials however, and after some initial statement of normally spaced partials. Here Lindberg gives us such spacing very early in the piece, before any other treatment of pitch, spectral or other. Assuming the presence of a phantom fundamental below hearing range explains the resonance of such a closely spaced chord in the extreme low register.

In m. 9 we are introduced to a new area of pitch focus around E, after a strong statement of two chords built on high partials of the B-F tritone that accompany its statement (signaling a formal shift out of a brief ostinato passage). E is sneaked into the high partial chord and grows out of it with an appearance of the descending gesture on A harmonic minor at m. 10. This becomes fully evident at m. 13, and between mm.: 20 and 52 there are two things happening harmonically. One is a half-step quasi-tonal play between E and Eb (D#), accentuated by adding partials of both pitches. The second thing that happens is an interception of partials of the B-F tritone as if to remind us that we never really leave that area harmonically (m. 20, m. 29 in the strings, m. 32 in the harp etc). At m. 52 the composer gives us a taste of the duality of his material, namely the bi-polar nature of the 'tonic' tritone. The B side manifests itself by two half-cadences in E minor, while on top of it the F side is stated by a chord sequence of: F-Bb/F-F-F7-F, a plagal cadence of sort. Both of those harmonic gestures are objects borrowed from the Purcell piece, but don't sound tonal as they're superimposed over the 'tonic' tritone in the lower register.

Two new harmonic areas are introduced in mm. 78 & 89, Eb, and Db respectively. Eb comes in as a new fundamental for a collection of partials that swirl among the ostinato figures above. Among them, very prominent are partials 10 (ma 3^{rd}), 11 (+4), 12 (p. 5th), and 14 (b 7^{th}), as well as 17 (b 2nd) just to keep the harmonic minor sound alive. Db enters in the same way in the low register at m. 89 and for the next 11 measures is asserted by a combination of partials 10 (ma 3^{rd}), 12 (p. 5^{th}), 14 (b 7^{th}), and scale fragments of Db harmonic minor. This connects directly to m. 112, where C is introduced in the very same way (upper partials and C harmonic minor fragments). This area (C) is preceded by another interesting set of harmonic movements. At m. 100 a brief reappearance of the phantom 'tonic' tritone via its partials transforms into F harmonic

minor, out of which Db (b 6th scale degree) is pulled in m. 111 and lands on C as a b2 cadence. This downward half-step motion (another tonal device) is continued to m. 113, where we get a G7/B chord, which asserts C, but also pulls down to the B-F tritone in the next two measures (mm. 114-115) over which C harmonic minor fragments are combined with partials 10, 14 of the B-F tritone.

This next section, from m. 114 to m. 130 marked by a speeding up harmonic rhythm, over a slowing down tempo is moving between different pitch areas, the already established: Db, C, G and new ones: A, Bb, F#, and lands on Eb. What distinguishes this section is the movement of these pitch areas, which follows a quasi-tonal root movement scheme, while the way they are established is purely spectral, by means of upper partials. Specifically, at m. 116 partials of G are transformed into partials of Db (verified to be such by the virtual fundamental generator software), and at the next measure (m. 117) through a mediant relationship we shift down to A, with an even more complete overtone picture above it, and at m. 118 up a half-step to Bb, followed by a whole-step up, to C (m. 119) and down a tritone to F# at m. 120, back up through a mediant major 3rd to Bb, and up a tritone to E at m. 123, landing at an extended Eb down a half-step at m. 124. It's notable to mention that in this section we never get the actual fundamentals, but only their overtone series, much like the original treatment of the B-F tritone. The partials get progressively higher in regards to both their place in the series and the actual pitch register where they reside. In fact, at measures 125-127 we don't even get a 'root' in the low register, but it's unmistakably an Eb series. We even get a linear ascend through upper partials in the trombone. The section climaxes at m. 130 with the highest tessitura in the piece thus far. Through a unified gesture the harmony then slips to an F# (Gb) fundamental at m. 132, another yet mediant move, which eventually pulls down to the F-B tritone at m. 149.

In measures 149-157 the B-F tritone is 'pulled' harmonically toward the B side. First at m. 149 it is stated under C harmonic minor fragments that hang on from the measures before, and in the next measure (m. 150) a B7 chord is superimposed over it, that gives way to B diminished chord, and in the next measure an extended B dominant harmony that includes a b 9th, a # 9th, and a major 6th, which at m. 152 turns into the most complete overtone picture of the B fundamental that we've seen in the piece. Once the

tritone is pulled from the base of this pyramid at m. 158, the partials linger on weaved into a continuum, which is intercepted at m. 175 by an A harmonic minor chord in the strings, which leads to a section that's clearly built on harmonic minor sonorities starting at m. 184 with a D harmonic minor sequence leading into an extended A harmonic minor passage between the second half of m. 185 and m. 188, and then in the next measure both A and D harmonic minor sonorities.

At m. 194 begins a section that is purely spectral in harmonic construction, with a lot of inharmonic partials introduced. First, at m. 194 a series of partials built on G is set into motion with a homophonic rhythmic movement, as opposed to overlapping loops that we've seen up to this point. This turns into Eb –generated partials at m. 217 (mediant relationship 'root' movement once again), and again into B –partials at m. 221for two measures. This one is even more complex, since the B fundamental is present but is left and re-approached by an upper half-step at first (C), and a lower whole step next (A), with the main body of overtones staying constant, while others (mostly lower ones) adjust with their moving generator frequency. At m. 223 the familiar descending gesture, this time consisting of partials of the B-F tritone pulls the sonority back to the 'tonic', which now is weighing towards the F side.

The next three measures (mm: 224-226) are characteristic overtone structures of bell sounds with fundamentals on C and B in m. 224, C and F in m. 225, and C in m. 226, as revealed by the virtual fundamental generator software. These are very resonant structures, comprised of out-of-tune partials that clash with each other because of the presence of a minor 3rd low in the structure. In fact, the first time the C bell-tone appears in m. 224 the fundamental is absent, giving a false impression of an Eb overtone series, and it isn't until the next measure that it manifests itself, showing its true colors at m. 226, where it's allowed to resonate longer, and act as a pull towards the final statements of the B-F tritone. This appears also with distorted spectra, spaced closely at the lowest range we've had, and finally opening up at m. 228 to the last three statements of the final sonority. These closing sounds, are covering the widest register, and include the B-F tritone, with a C-F# tritone superimposed. This C-F# tritone is the two possible keys that a tritone would resolve to had it been functioning tonally, only instead of the resolution

following the dominant tritone sonority, it is stacked on top of it vertically. This concludes the ambiguous harmonic journey that the composer has taken.

Treatment of Descending Gesture

The descending gesture that is introduced at m. 4 is very important in outlining the form by generating continuums, interrupting textures and pulling the harmony towards specific areas. We can speak of one gesture, even though it appears in three shapes: descending, ascending and a combination of the two. This is made clear very early, at m. 6 where it's already stated in both descending and ascending order. Most of the time it is made up of harmonic minor scale fragments, as already mentioned, but it retains its character even as it transforms its intervalic content. At m. 8 it's made of partials of the B-F tritone that pulls us harmonically to it.

At m. 33 it is made up of different harmonic minor scale fragments, specifically A minor and G minor, as is at m. 39 (C minor and D minor). At m. 106 it's a combination of C harmonic minor and the octatonic scale, while at m. 131 it consists of stacked 3rds, both major and minor. At m. 182 it combines G harmonic minor and the octatonic scale.

At m. 202 the gesture takes its most prominent role, by being stated in concert by all the winds at a prominent register, unifying the two worlds of Eb and G partials, and at m. 219 it functions similarly as a sequence of partials, but also as a Bb harmonic minor aggregate. At m. 227, the last time it appears, it introduces the final sonority of the two superimposed tritones by arpeggiating it.

Continuums: Construction and Function

As mentioned, the continuums are present throughout the piece, and they are made up of overlapping ostinato figures that weave in and out of each other, each with its own separate rhythmic subdivision. Their function is to increase or decrease density of texture, as well as speed up or slow down the perception of pace. They also function in a spectral way: they create acoustical 'beats' between partials, as they alternate between different pitches of the overtone series. This is indicated on the attached harmonic

scheme musical example as tremolos in the chords where this happens. This treatment also appears very early in the piece at m. 4, where the bassoon E-F repeated notes are partials 15-16 of F, while the harp B-C# repeated notes are partials 8-9 of B.

As far as the construction of the continuums goes, there are different ways the composer builds them, and they're not consistent with each other. The main techniques used with some consistency of approach are:

1) Alternation of two pitches.
2) Three or four pitches of the harmonic minor scale are set into motion in a pattern that does not correspond with the number of pitches, so that a 'swirling' effect is produced, as in m. 15 in the viola
3) A pattern is transposed by 3rds, as in m. 7, where the pattern is made up of minor 3rds, and transposed up by major 3^{rds}.
4) A pattern is 'turned around' in the measure by adding or subtracting a note, as in m. 35 in the clarinet, which begins as a pattern of five sixteenth-notes (using technique #2), and then one pitch is taken away, leaving four sixteenths.
5) The interval between two alternating pitches grows, as in m. 48 in the cello, where a major 3rd, becomes a p. 4th, and then a p. 5th.
6) An intervalic shape is reversed, as in m. 73 in the woodwinds, where the pattern of downward whole-step/half-step, turns into downward half-step/whole-step.
7) Transferring a pattern to a different instrumental color and register, as in mm. 83-84, where the triplet figure is passed from the vibes to the harp to the piano, descending in register.
8) Off-beat accenting of repeated-note patterns, as in mm. 90-92 in the strings.
9) A repeated pattern slows down or speeds up within the measure, without changing pitch content, as in mm. 98-99 (woodwinds and strings).
10) A ritardando with no change in pitch or rhythmic content, as in m. 115.

Because of all the shifting within the ostinato figures and among them, when the moment comes that they are in sync it's really striking. At m. 193 begins such a moment, which of course is saved for the last section on the piece, adding excitement and a climax to this kind of texture.

It's also worth noting that the desired effect is achieved thanks to a very careful way of orchestrating. Lindberg goes for the maximum amount of blending, and that is achieved by mainly thinking in choirs, very careful use of brass, and precise use of individual instrumental tessiturae, so that especially during spectral passages, the partials can fuse to give the illusion of a unified fundamental. This, of course, comes right out of the French school of orchestration, and is employed here with great mastery.

As a second-generation spectralist, Lindberg has expanded the explorations of Grisey and Murail in a way very different from his French contemporaries, who have moved into more and more inharmonicities. He has kept his sonorities less dissonant, allowing for more resonant, stable and even 'old'harmonies to sound-an anathema in itself in most contemporary music-, while at the same time keeping music quite complex and cerebral in its other dimensions, and has been using computer technology as an aid, but not as a catalytic element, as have other IRCAM composers. He has also let himself remain open stylistically, and let elements of very diverse musical styles find their way into his music, producing a very distinct, personal voice that is a very promising prospect of where contemporary music is headed.

References

IRCAM (Eds.) (1996). Les *Cahiers de l'Ircam: Magnus Lindberg*. Collection: *Compositeurs d'aujourd'hui*. Editions Ircam-Centre Georges-Pompidou, Helsinki University Printing House, 1996.

Virtual Fundamental Generator [plug-in by TG Tools] for Finale [Computer software]. (2002). Eden Prairie, MN: Coda Music Technology.