Esa-Pekka Salonen
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May 5, 2021

Dear Mr. Salonen,

I am designing an animated graphical score for the second movement (*Organisme*) of your composition for solo piano *Dichotomie*.

The attached pages describe the project in progress.

Best regards,

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stephen@musanim.com

P.S. If you'd like to view the latest draft, it can be viewed here:

`tinyurl.com/SDOrg`

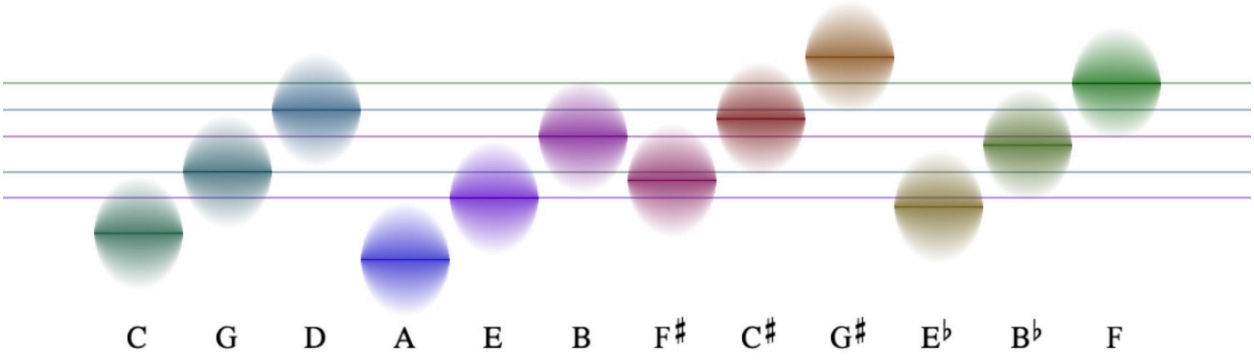
Salonen: *Dichotomie (2000) II. Organisme*

Introduction / Background / Approach

Scores for musicians are for the purpose of recording, studying, and performing music, and are therefore descriptive and prescriptive—a list of instructions for how to realize the composer's intent. By contrast, scores for listeners function more as perceptual aids, facilitating the recognition and understanding of musical elements. They can therefore dispense with precise instructions, and focus instead on making those elements more obvious and comprehensible.

Much of the effectiveness of animated graphical scores comes from sensory fusion—our innate ability to group perceptions into objects, events, and causal chains. If the visual element representing a musical note changes its appearance in a way that's synchronized with the sound of that note, we automatically, effortlessly perceive it as being associated with the note. As a result, the viewer's attention is available to notice other things (some of which I'll describe here).

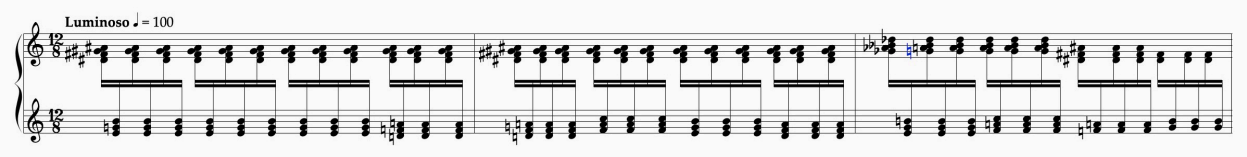
The format of this graphical score is similar to conventional music notation: pitch indicated by vertical position, timing by horizontal position. The horizontal center of the display corresponds to the now moment: any sounding note intersects that midline. Because it is sometimes useful to recognize whether a note is the same pitch as another note, I use a system in which each of the twelve pitch classes is given its own color:



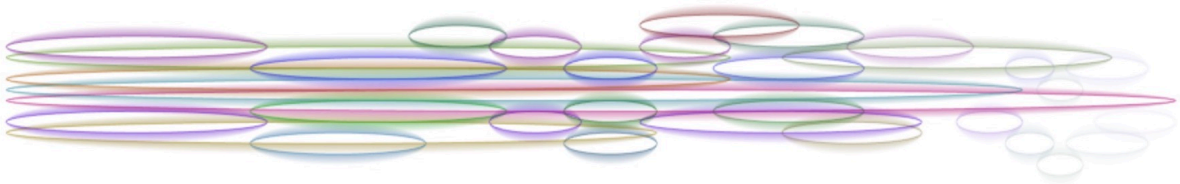
The colors are chosen by mapping pitches in the order of the circle of fifths to colors in the order color wheel (this system is described in more detail here: www.musanim.com/HarmonicColoring).

Description / Discussion

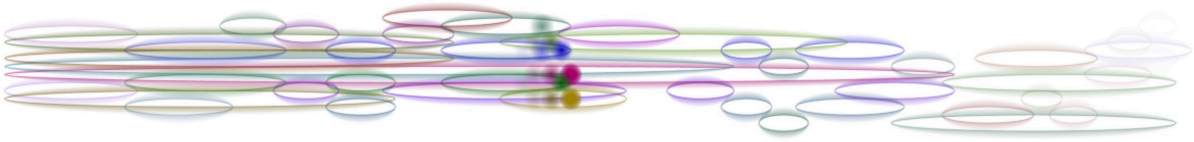
The movement begins with shimmering chords, alternating between hands:



The graphical score depicts two aspects of this; first, the slowly-changing chord sequence ...

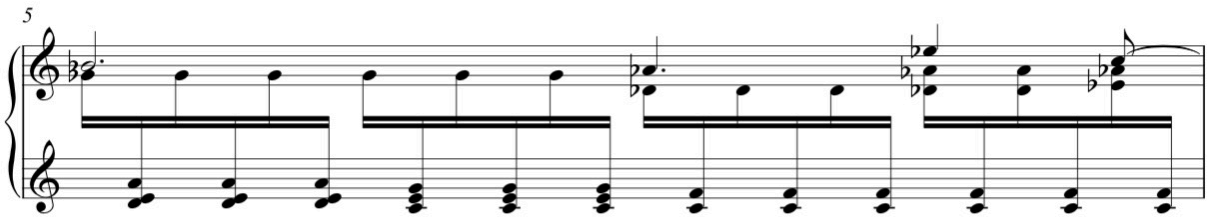


... and second, the individual notes that happen more quickly ...

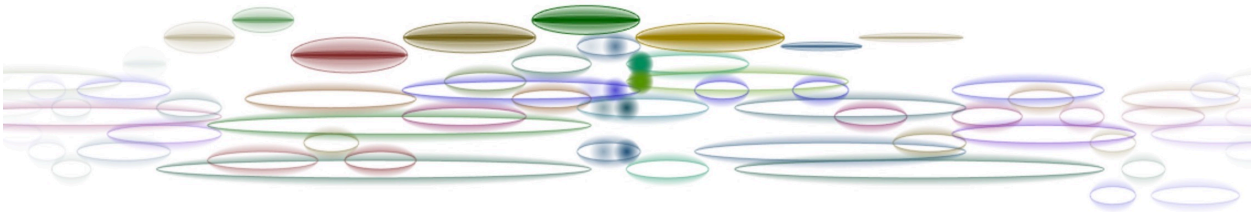


This texture forms the foundation for the entire movement, and whenever notes are not doing anything different (requiring special attention), they are depicted in this way.

The first different thing happens in measure 5, a languidly-moving melody at the top ...

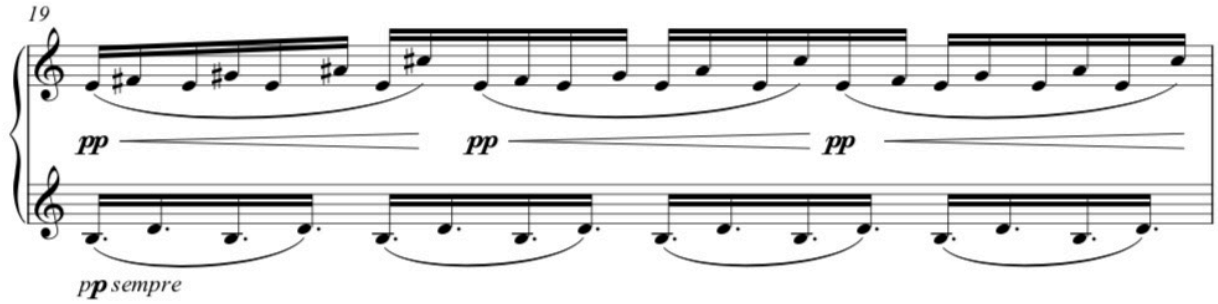


Because this melody is more sustained and starts out moving at about the same rate as the underlying chord sequence, I chose to depict it with wide ellipses, and to show more of it in the past and future than I did with the alternating chord notes ...

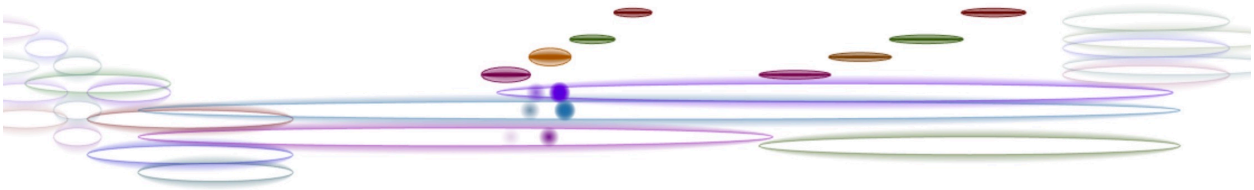


This raises an interesting question: in the *auditory scene*, how long (wide) is the perceptual now, and how much of the past and future should a graphical score show? There isn't any single, simple answer to this, but in general I try to show enough of the past and future to give the viewer the necessary context to understand what's happening at the now.

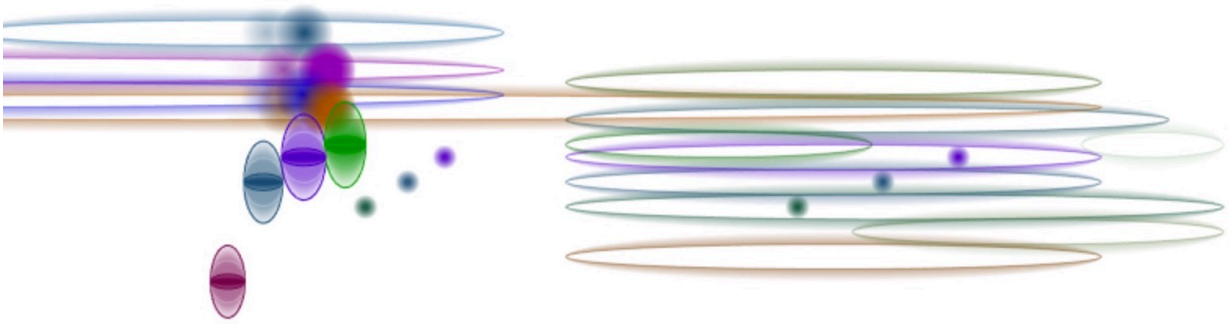
Because things happen at different rates through the piece, the amount of past and future I'm showing changes—which means that some notes move across the screen faster than others.
For example, here ...



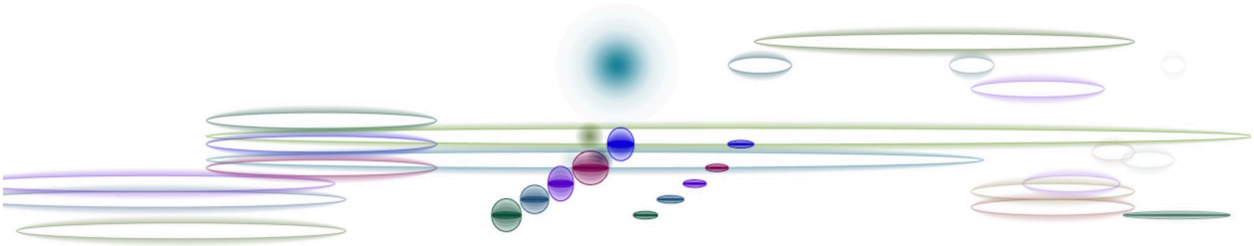
... a new pattern is introduced: a short, 4-note, upward-moving chain in the soprano (F#, G#, A#, C#). Because it is short and quick, not much context is needed to make sense of it, so I have the groups ...



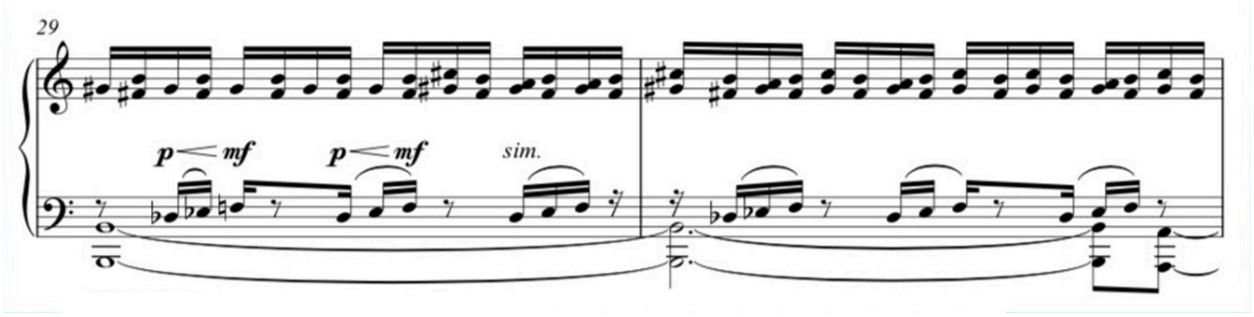
... dash on and off the screen fairly quickly. Some of these are less noticeable, and I make them smaller ...



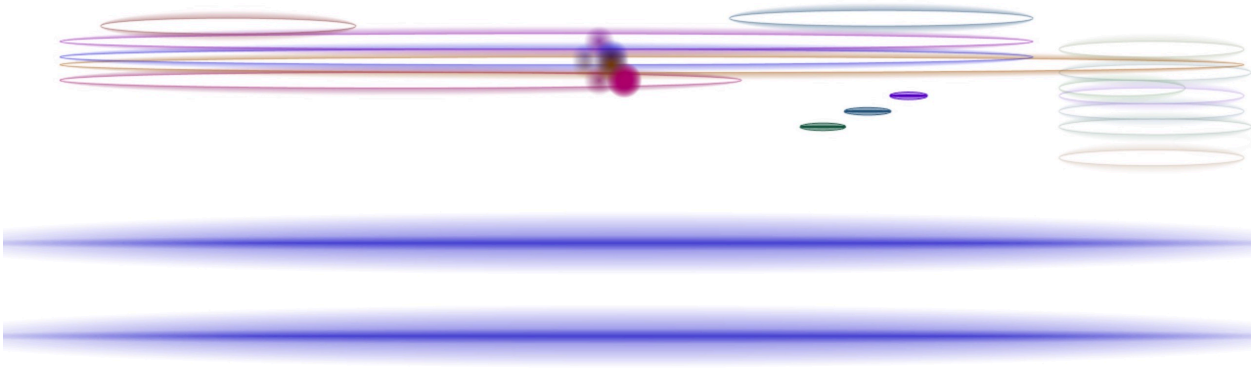
Some notes appear unexpectedly, and it would be contrary to the composer's intent to prepare the listener for them, so (spoiler alert) I don't show these ahead of time, and just have them appear when they sound:



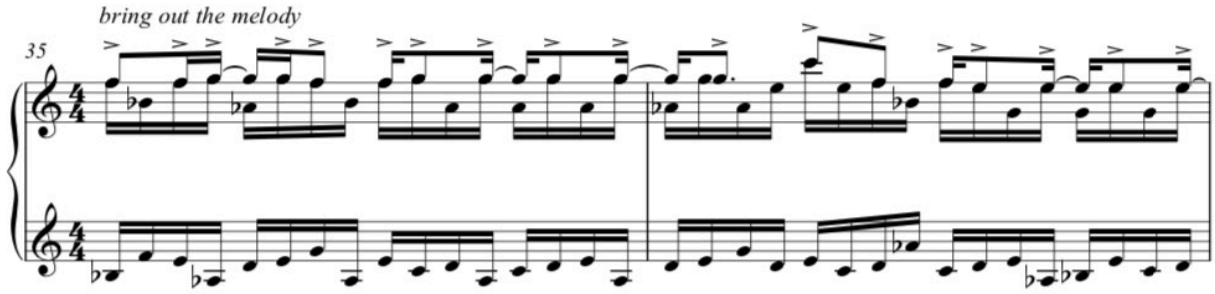
When a note lasts a long time, and doesn't seem to go anywhere (or, if it does, it does so slowly, without feeling like a moving melody), how should that look? For example, in measures 29-30, there is a long, sustained octave in the bass ...



Rather than using scrolling notes for these, I have notes that fill the whole horizontal space ...

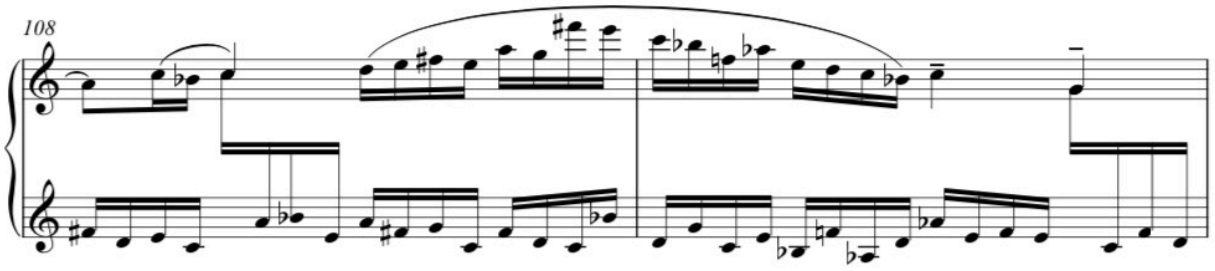


Further along in the piece, some new characters appear. In measure 35 ...

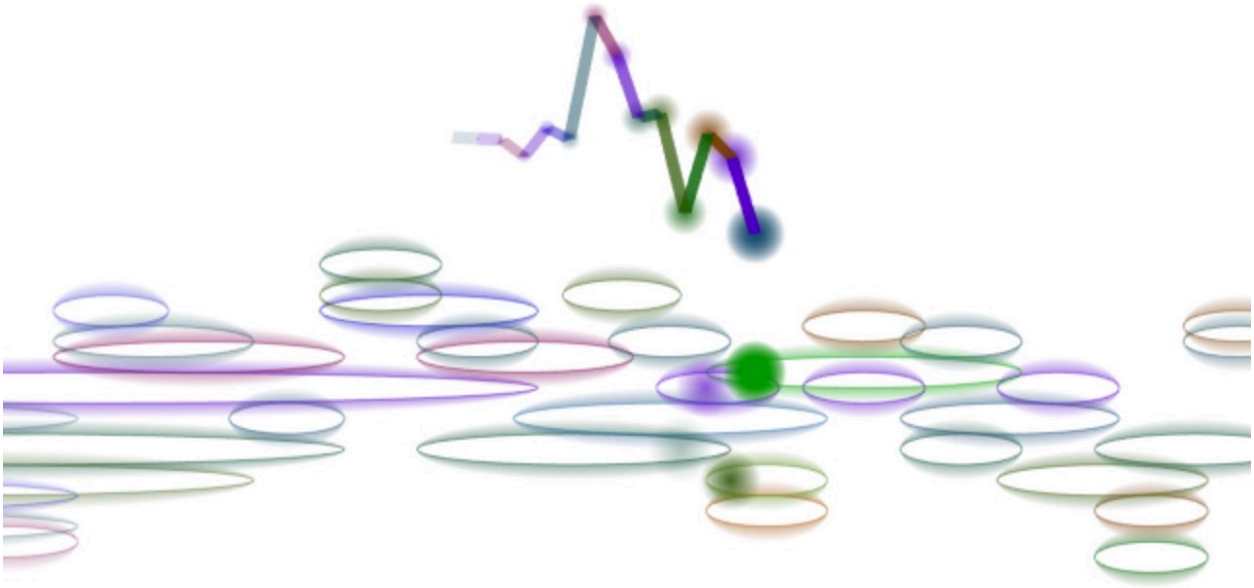


... there's a skipping pattern in the soprano, which I assign a new graphic to (one which tilts a bit, vertically, to show that it's skipping) ...

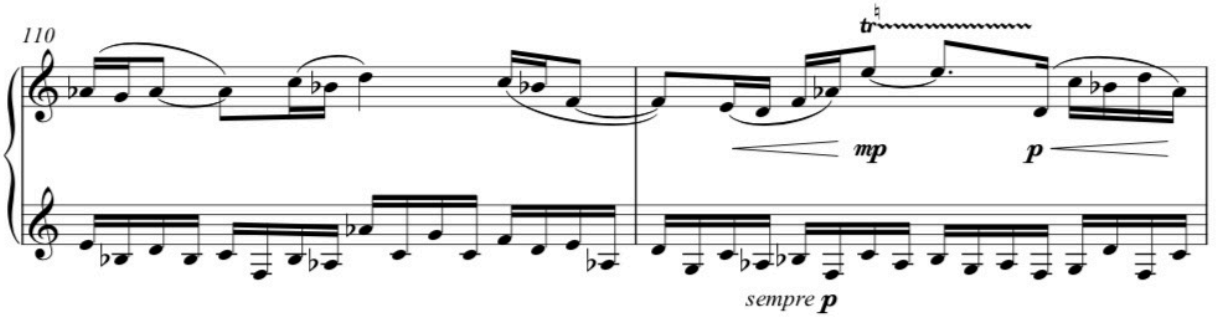
... and a while later, there's an angular melody in the soprano ...

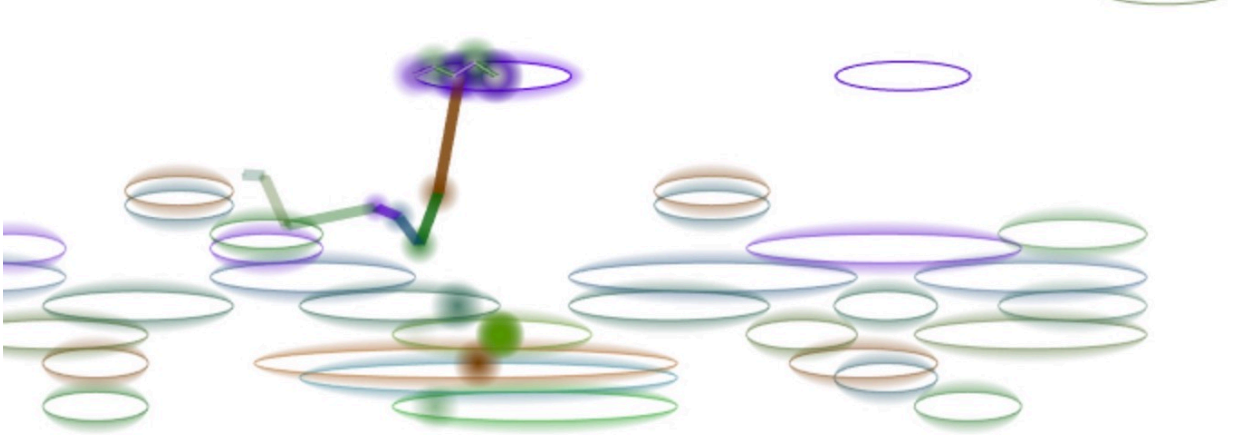


... which I've shown with a bouncing snake ...

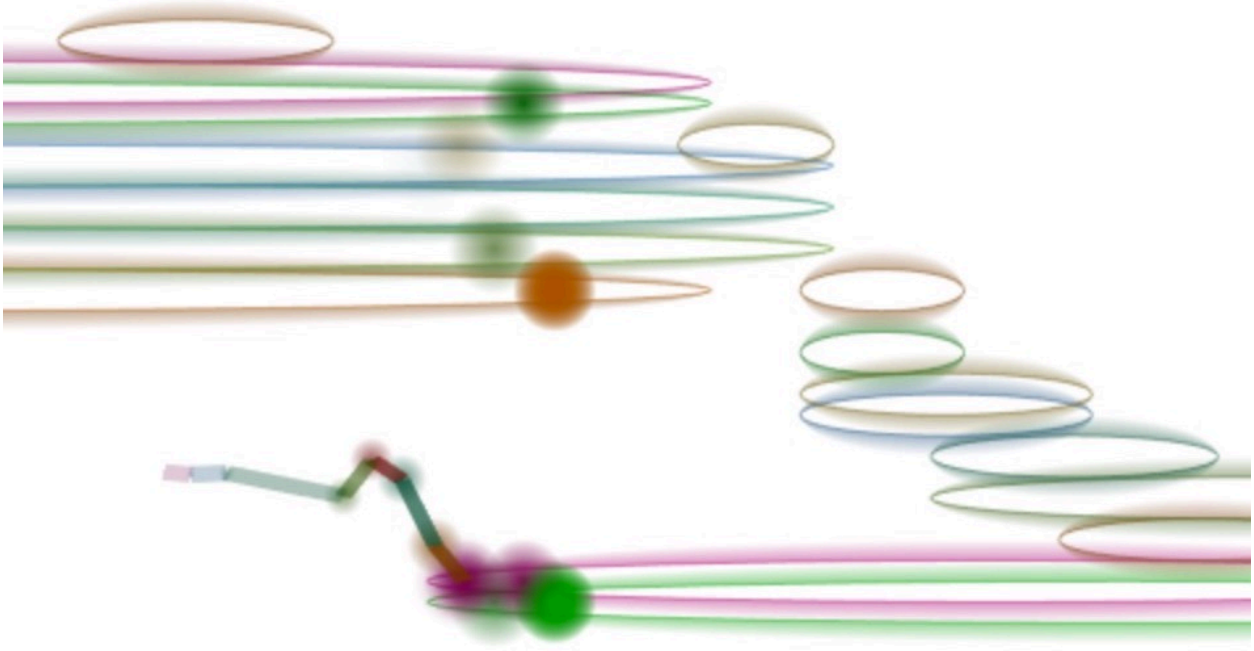


... which, later, jumps up to join the trills floating by ...

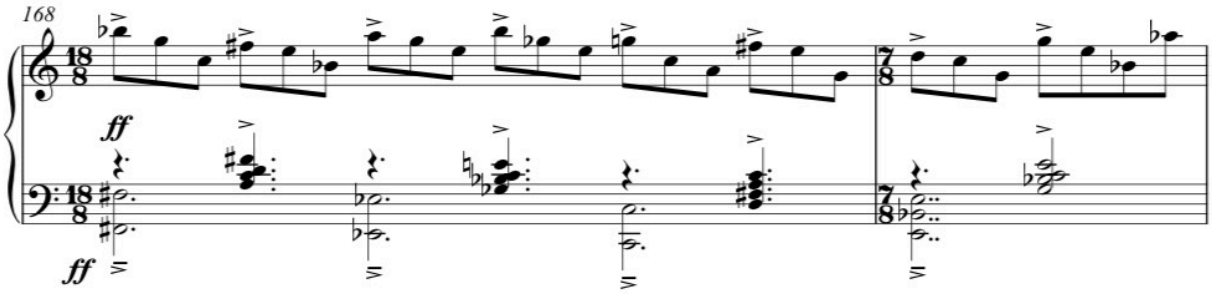




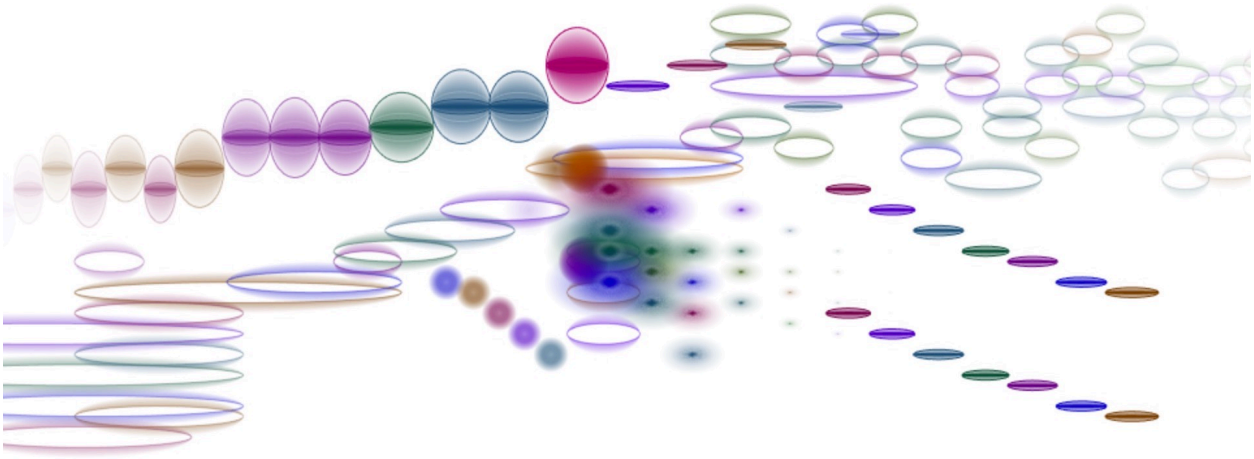
... and eventually settles back into the background ...



I don't want to spoil the ending, but I'll tell you this much: when you get to these forceful bass chords ...



... which start appearing, innocently, in blurry notes with dark centers ...



... you'll know that it's about to happen.

Overview

Here's what the whole piece looks like in conventional notation ...

... and in graphical notation ...