

Map of Trees

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Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Music

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Prologue

About a decade ago I wrote a journal entry that consisted entirely of the words “build a better piano.” In some ways *map of trees* is a fulfillment of that ambition, but rather than start from scratch, I’ve taken a grand piano and added my own extensions.

When I got glasses in fourth grade and realized that trees were more than green smudges, I was touched by the intricate and infinitely varied patterns of branches and leaves. Around the same time I was just beginning to love playing the piano. There was that moment when I stopped seeing the keyboard as an intimidating jumble of black and white and instead saw it as a playground for the imagination. Over time I have expanded this playground to the insides of the piano. Now when I sit down at the piano, it feels like a familiar neck of the woods through which any number of paths can be taken. The goal of *map of trees* is to somehow share this simultaneous sense of exploration and clarity.

The task of mapping trees is incredibly impractical and never complete. Every year trees are chopped down and planted. Every year they grow taller and wider. Sometimes they are trimmed or reduced to stumps. The more detailed the map, the more quickly it becomes dated, especially in the case of a photographic satellite view such as that on Google Maps. In that case the “map” becomes simply a moment frozen in time.

When I first started composing and playing this set, I felt sympathy with the would-be cartographers of trees. My challenge was to compose a score for each movement that would both communicate its essence and circumscribe its bounds of improvisation. Like different specimens of the same species of tree, certain key traits will always be recognizable even as countless details differ. To me that is the beauty of this project – there is no definitive *map of trees*, but the forest is regrown with every performance.

Michael Wahlquist, March 2013

General performance considerations

This set is intended as a concert length program for a solo pianist. Individual movements or subsets may also be performed independently. There is no set concert order, with one exception: the third section of *slivers of a crystal forest* (III. *fractal leaves*) should always be the final number. When not played as a single movement, the three individual sections of *slivers of a crystal forest* may be spaced between other numbers; however, their order should be maintained. Three of the movements use the same set of piano preparations: *ashtottara shatanama*, *spring tension rites*, and *copse circuits*. It is recommended these be played as a contiguous unit, in no specific order, so that the piano preparations need not be reset.

Each movement relies heavily on improvisation with various styles and extended piano techniques. Because every piano will be somewhat different, performers are encouraged to spend time exploring the range of sounds that can be produced on their piano.

A grand piano is essential to the performance of this set. The music rack should be removed and set aside. Performers are advised to take the following precautions when performing inside the piano: Use clean hands. Do not touch the dampers. Dampers should be raised when objects are inserted or removed from the strings.

Materials checklist

- About a dozen plastic hair combs in various sizes.
- About a dozen wedge-shaped rubber doorstops.
- About a dozen nuts or washers in various sizes.
- Several dozen bolts in various sizes.
- Five plastic mechanical pencils with the lead removed and the erasers glued in.
- A compact set of powerful speakers, such as computer speakers.
- An Apple computer.
- An inline volume pedal with connecting cables to the computer and speakers.

Piano preparations

This set of piano preparations applies only to *ashtottara shatanama*, *spring tension rites*, and *copse circuits*. These preparations should result in a fully prepared piano, with the sound of every note altered across the range of the piano.

- Place about a dozen rubber doorstops across the strings of the lower third of the piano, in such a way that they bounce when a key is struck. Several

may also be loosely wedged between the strings and the cast iron frame above, resulting in a deep “thud” when a key is struck.

- Insert various sized hair combs into the strings of the upper two sections (top third) of the piano. When the keys are struck this should produce a “plinking” sound.
- Insert a variety of bolts into the middle section of the piano. Make sure the dampers are up when inserting the bolts. Use something flat like a tongue depressor to slightly widen the space between the strings so that the bolt will not scrape them. About a half dozen of the bolts should be paired with oversized washers or nuts loosely resting on the strings so that a struck key results in a buzzing sound. Where there are three strings to a note, place the bolt between the rightmost strings. This way when the soft pedal is depressed there are no open strings. Employ a variety of distances from the dampers. (Closer tends to bring out loud lower tones, while farther out can produce a strong harmonic ringing. A more middle placement can result in rich overtones).
- Using a similar approach, place an additional half dozen bolts, some with loose washers or nuts, in random strings of both the lower and upper thirds of the piano.
- Test each note across the range of the keyboard to make sure that every note is altered in a satisfactory way.



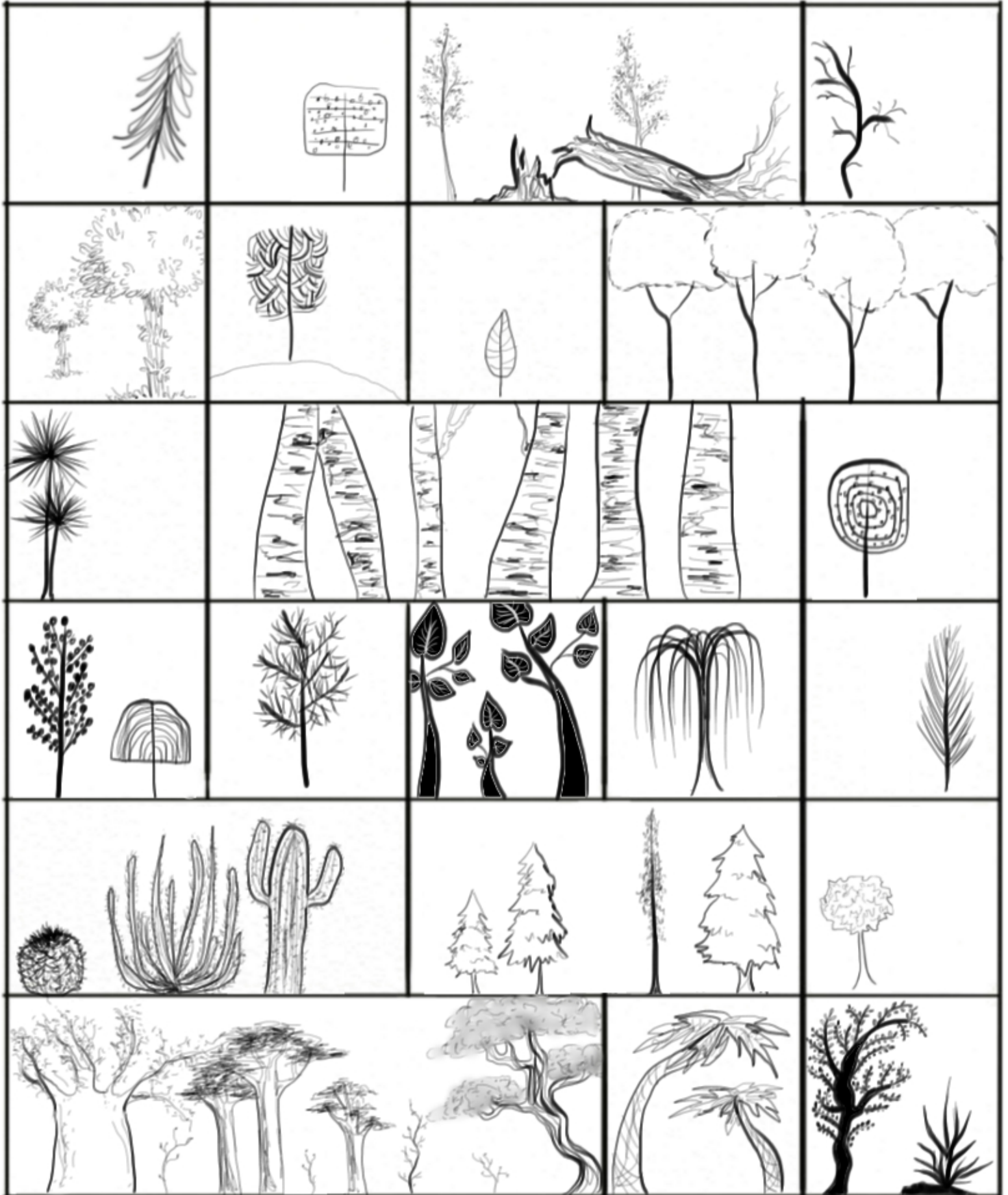
ashtottara shatanama

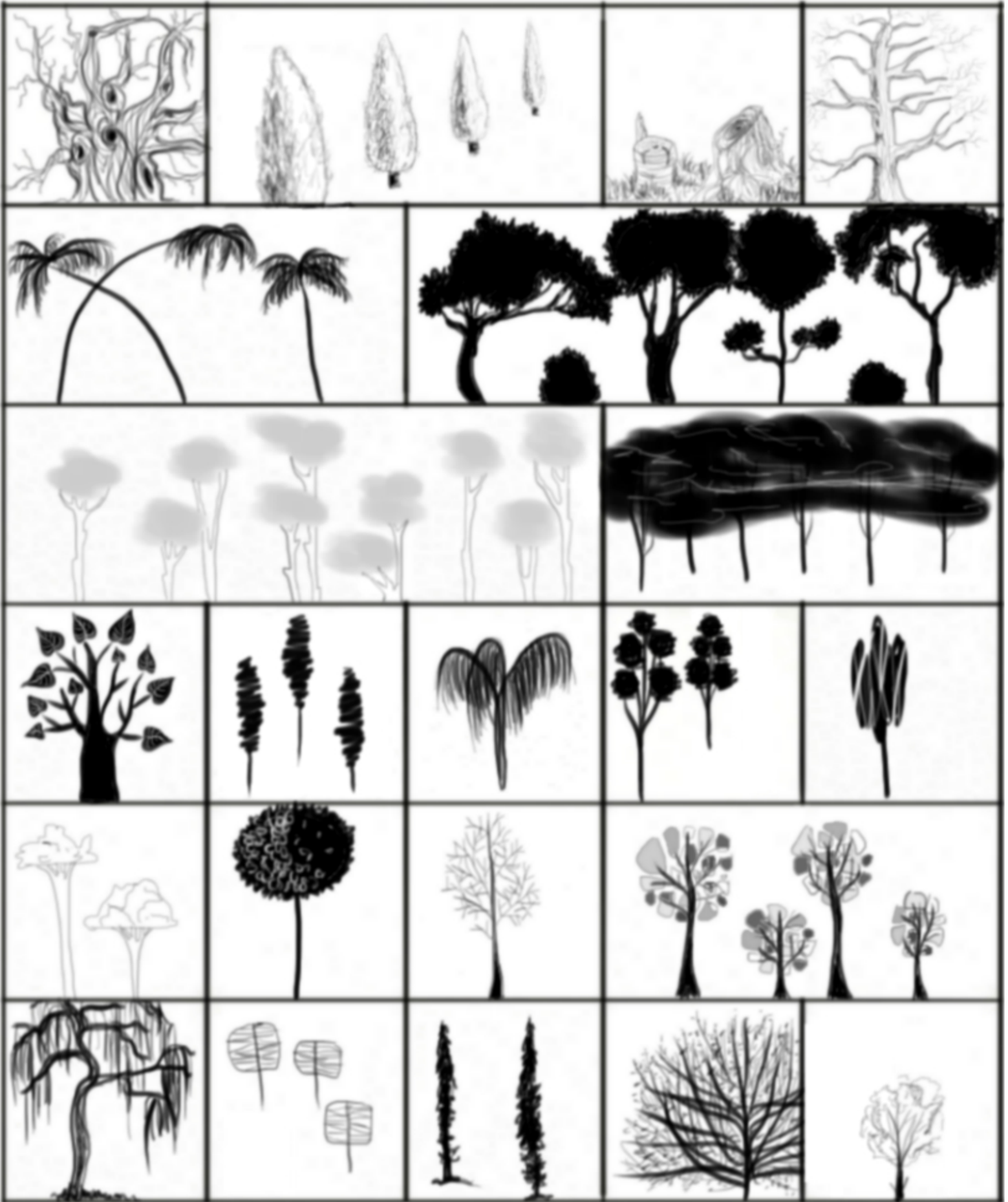
Performance notes

- Prepare the piano as instructed in the general performance considerations. If played as a contiguous unit with *spring tension rites* or *copse circuits*, these preparations may be altered slightly for the sake of variety. (For example, various bolts in the middle register may be slid closer or farther along the strings, and some of the bolts with washers may be switched to different strings).
- The performer is encouraged to copy the score, cut out the sections and rearrange the layout as desired. Every forest is unique. As printed, the score is read from left to right as two separate pages.
- Generally meditative and *pianissimo*. Relish quietude, nurture sound.
- Each tree should be creatively interpreted as a sonic event consisting of one or more notes or sounds by taking cues from the visual score – detail and complexity, repetition and variety, shape, shading and gesture. Sound may be produced both on the keyboard and inside the piano. (For example, an extra comb or rubber doorstop may be used to strike or scrape the strings or the bolts. Fingers may be used inside the piano to scratch, mute, or pluck the strings).
- Each square on the grid represents five to fifteen seconds.
- Slightly depress the sustain pedal, allowing some resonance but not too much wash. The soft pedal may be used to alter the sound, especially in the middle register where the shift will leave only altered strings.

I often warm up on the piano with an improvised “prayer” consisting of chords. With this texture in mind I first composed this piece as a musical equivalent of the prayer labyrinths found in certain parts of the world – a winding, irregular path to spiritual centering. The original score consisted of moveable magnetic sections that could be arranged to create many different performances. For this version I have created a graphic score depicting 108 trees of different varieties, in groupings of 1, 2, 3, 4, 6, or 9, enclosed in boxes of various sizes. The title refers to a Hindu practice of reciting 108 different names of God.

ashtottara shatanama





spring tension rites

Performance notes

- Prepare the piano as instructed in the general performance considerations. If played as a contiguous unit with *ashtottara shatanama* or *copse circuits*, these preparations may be altered slightly for the sake of variety. (For example, various bolts in the middle register may be slid closer or farther along the strings, and some of the bolts with washers may be switched to different strings).
- Generally rapid and insistent.
- Sound may be produced both on the keyboard and inside the piano. (For example, an extra comb or rubber doorstop may be used to strike or scrape the strings or the bolts. Fingers may be used inside the piano to scratch, mute or pluck the strings).
- The score portrays the defining concepts of this movement. The performer should interpret these concepts while exploring the sounds of the prepared piano. Move freely around the page from concept to concept. Each one should be visited about three times: Once as a brief gesture, once as a transition, and once as a major subject of development.
- The soft pedal may be used to alter the sound, especially in the middle register where the shift will leave only altered strings.

After creating the preparations for ashtottara shatanama, I wanted to play around with them in other ways. If ashtottara shatanama is a chorale, then spring tension rites is a fantasia – a free improvisation over the given piano preparations. What defines this movement from performance to performance is the variety of sounds of the prepared piano and the general concepts illustrated in the score. This setup provides a wild garden of sounds that is different with each expedition.

spring tension rites

EVENT

RESPONSE

ASCENT

DECLINE

OSTINATO

RESISTANCE

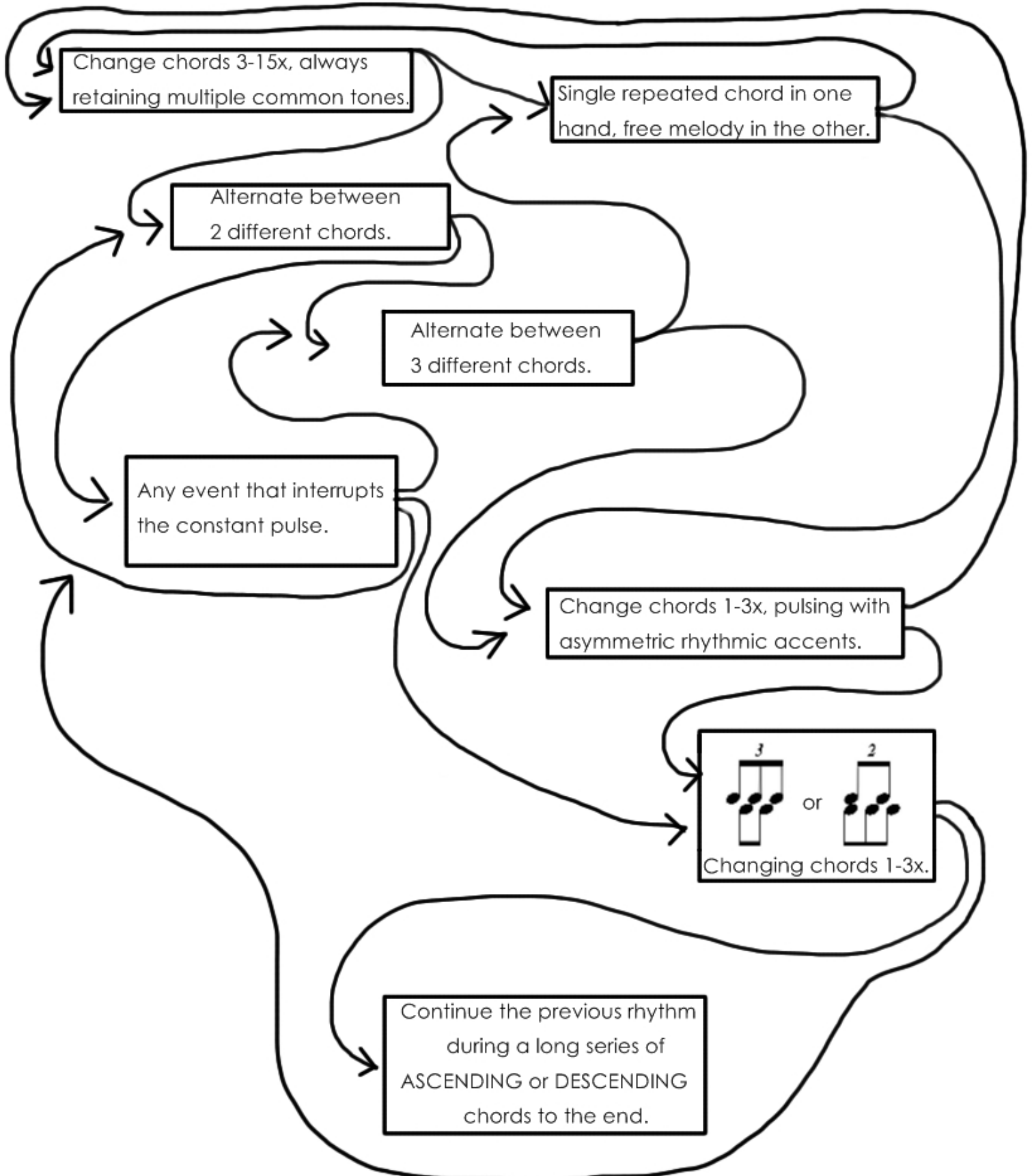
copse circuits

Performance notes

- Prepare the piano as instructed in the general performance considerations. If played as a contiguous unit with *ashtottara shatanama* or *spring tension rites*, these preparations may be altered slightly for the sake of variety. (For example, various bolts in the middle register may be slid closer or farther along the strings, and some of the bolts with washers may be switched to different strings).
- Unlike *ashtottara shatanama* or *spring tension rites*, this movement employs no playing inside the piano and should be played exclusively on the keys.
- The default texture should be repeated chords, pulsing at 200 bpm. There should be a chord on every beat unless a moment of interruption is reached.
- Chords may be any density from 2 to 10+ notes. The actual harmonic content of the chords is left to the performer. An important consideration is how the chord's color is affected by the piano preparations. A chord made up primarily of notes prepared with bolts with washers will sound very different from one without such notes.
- Each box on the score indicates an alteration to the basic texture of pulsing chords. Any time the instructions indicate to change or alternate chords, each chord may be repeated as many times as desired before changing or alternating to the next chord. Maintain the texture of each box from 5 to 20 seconds.
- Start with the top-left box, and follow the arrows from box to box. Each box must be visited at least once, but not much more than twice. Repetitions of a box should not be identical to previous iterations.
- Advancing to a new box may be accompanied by a dramatic shift in register.
- The soft pedal may be used to alter the sound, especially in the middle register where the shift will leave only altered strings.

*This movement explores the idea of sectional form within an otherwise improvised structure. A copse is a small group of trees, represented in the score by the different boxes. The circuits are the arrows that connect the boxes. The resulting maze structure shapes the piece in a way that will be self-similar but infinitely different with each performance. As a companion piece to *ashtottara shatanama* and *spring tension rites*, *copse circuits* provides yet another way of exploring the exotic sounds that result from the prepared piano.*

copse circuits



monkey business

Performance notes

- After playing through the chart once as written, take a solo.
- During the solo, the score becomes a garden of ideas for the improviser. Chords, snippets of melody, rhythmic gestures and any other elements of the score may be plucked out to be developed and cultivated.
- After the solo play through the chart once again. The ending should be improvised.

Influenced by Thelonious Monk, monkey business is a rather straight-ahead jazz tune, albeit one with quirky rhythms and meters. After playing the head more or less as written, I take a rather free solo that is not so much over the chord changes of the tune as influenced by them, a practice Ornette Coleman called "harmolodic improvisation." The title monkey business suggests a certain amount of playfulness as well. I particularly enjoy finding different ways of returning surprisingly-yet-inevitably to a reprise of the head.

monky business

medium swing ♩ = 116

B^b13

B 9(#5)

B^b13

The first system of music consists of two staves. The upper staff is in treble clef with a key signature of two flats and a 4/4 time signature. It begins with a whole rest, followed by a series of chords and eighth notes. The lower staff is in bass clef with the same key signature and time signature, featuring a steady eighth-note bass line. A fermata is placed over a whole note in the bass staff at the end of the system.

E 7(#11)

E^b13

The second system of music consists of two staves. The upper staff has a 6/4 time signature and features a triplet of eighth notes. The lower staff has a 4/4 time signature and continues the bass line with eighth notes and rests.

B^b13

B 9(#5)

D^b13

G^b13

The third system of music consists of two staves. The upper staff has a 6/4 time signature and features a triplet of eighth notes. The lower staff has a 4/4 time signature and continues the bass line with eighth notes and rests.

Cm13

F 9

B^b13

D^b13

The fourth system of music consists of two staves. The upper staff has a 6/4 time signature and features a triplet of eighth notes. The lower staff has a 4/4 time signature and continues the bass line with eighth notes and rests.

B^b13

D^b13

B 9(#5)

The fifth system of music consists of two staves. The upper staff has a 6/4 time signature and features a triplet of eighth notes. The lower staff has a 4/4 time signature and continues the bass line with eighth notes and rests.

monkey business

Performance notes

- After playing through the chart once as written, take a solo.
- During the solo, the score becomes a garden of ideas for the improviser. Chords, snippets of melody, rhythmic gestures and any other elements of the score may be plucked out to be developed and cultivated.
- After the solo play through the chart once again. The ending should be improvised.

Influenced by Thelonious Monk, monkey business is a rather straight-ahead jazz tune, albeit one with quirky rhythms and meters. After playing the head more or less as written, I take a rather free solo that is not so much over the chord changes of the tune as influenced by them, a practice Ornette Coleman called "harmolodic improvisation." The title monkey business suggests a certain amount of playfulness as well. I particularly enjoy finding different ways of returning surprisingly-yet-inevitably to a reprise of the head.

monky business

medium swing ♩ = 116

B \flat 13

B 9(#5)

B \flat 13

The first system of music consists of four measures in 4/4 time. The key signature has two flats (B-flat major/D minor). The first measure has a whole rest in the treble and a quarter note in the bass. The second measure features a complex chord in the treble with a slur and a fermata, and a quarter note in the bass. The third measure has a complex chord in the treble with a slur and a fermata, and a quarter note in the bass. The fourth measure has a complex chord in the treble with a slur and a fermata, and a whole note in the bass. Chord symbols B \flat 13, B 9(#5), and B \flat 13 are placed above the measures. A 'v' (accents) is placed below the treble staff in the third measure. A '(b) σ ' (pedal point) is placed below the bass staff in the fourth measure.

E 7(#11)

The second system of music consists of four measures in 4/4 time. The first measure has a quarter note in the treble and a quarter note in the bass. The second measure has a quarter note in the treble and a quarter note in the bass. The third measure has a quarter note in the treble and a quarter note in the bass. The fourth measure has a quarter note in the treble and a quarter note in the bass. A '3' (triplets) is placed above the treble staff in the third measure. A 'v' (accents) is placed below the bass staff in the fourth measure. The time signature changes to 6/4 in the second measure and back to 4/4 in the fourth measure.

E \flat 13

The third system of music consists of four measures in 4/4 time. The first measure has a quarter note in the treble and a quarter note in the bass. The second measure has a quarter note in the treble and a quarter note in the bass. The third measure has a quarter note in the treble and a quarter note in the bass. The fourth measure has a quarter note in the treble and a quarter note in the bass. A '3' (triplets) is placed above the treble staff in the third measure. A 'v' (accents) is placed below the bass staff in the third measure. The time signature changes to 6/4 in the second measure and back to 4/4 in the fourth measure.

B \flat 13

B 9(#5)

D \flat 13

Musical notation for the first system, featuring piano accompaniment and a treble clef staff with a melodic line. The key signature is B-flat major. The first two measures are in 4/4 time, and the last two are in 6/4 time.

G \flat 13

Cm13

Musical notation for the second system, continuing the piano accompaniment and melodic line. The key signature is B-flat major. The first two measures are in 4/4 time, and the last two are in 6/4 time.

F9

B \flat 13

D \flat 13

Musical notation for the third system, continuing the piano accompaniment and melodic line. The key signature is B-flat major. The first two measures are in 4/4 time, and the last two are in 6/4 time. A triplet of eighth notes is marked with a '3' in the bass staff.

B \flat 13

D \flat 13

B 9(#5)

Musical notation for the fourth system, concluding the piano accompaniment and melodic line. The key signature is B-flat major. The first two measures are in 4/4 time, and the last two are in 6/4 time. A triplet of eighth notes is marked with a '3' in the bass staff.

fruit, tree, flesh

Performance notes

- This movement is divided into three distinct sections, all of which involve playing on and inside the piano simultaneously, muting the strings to create a variety of startling sounds. For each section a collection of pitches is given, along with a technique of muting the strings.
- Place a chain or pencil across the lower strings of the piano in such a way that it will buzz with sympathetic vibrations.
- Keep the sustain pedal down throughout the first section. Use with discretion for the second and third sections.

The title refers to the Garden of Eden – the fruit that opened Adam and Eve’s eyes, the Tree of Life that was put out of their reach, and their exodus from the Garden as they became mortal flesh. This story is the most meaningful to me as I think of how it represents a symbolic progression in each person’s life – knowledge gained, innocence lost, and opportunity opened.

fruit, tree, flesh

slow and cryptic

I

- Improvise on the given pitch sets with the right hand while muting the strings with the left hand (on the near side of the hammers).
- Explore various positions of the left hand on the strings to create different timbres.

TRANSITION: improvised.

rapid and intense

II

- Stand and mute the strings of each indicated note inside the piano with the left hand (on the far side of the hammers).
- Improvise various rhythmic patterns on these notes in the right hand.
- Slide the left hand on the strings to create different timbres and emphasize different harmonics.
- Gradually trade out the notes of the first set for notes of the second set, and then the notes of the second for the third (a repeat of the first).

TRANSITION: gradually slow the pattern above and interject the pattern below.

as fast as possible

III

- Play the lowest C a little faster than evenly possible with the left hand.
- Simultaneously improvise various scrapes, mutes, and taps on the string with the right hand.
- D \flat and B can serve as brief diversions from C.
- End by muting the string on the near side of the hammer and gradually moving towards the tuning pins.

dendrochronology

Performance Notes

- This tune consists of an obstinate ostinato in the left hand and even more obstinate repeated notes in the right. The middle solo section gives a choice of two walking bass rhythms, allowing a free solo to break out.
- If desired, the pitches of the bass line may be altered occasionally.

The title refers to the study of the annual rings of trees. These rings help to determine the age of a tree. They can also reveal information such as whether or not the winter was hard that year, or the rainfall plentiful. In this movement time can seem to stretch out and be distorted by the lengthy repetitions. The central solo becomes a moment of change, a new way to mark the passing of time.

dendrochronology

obstinately ♩ = 150
≥ 1x

≥ 1x

etc.

Generally as quietly as possible, with swells.

The first system of the musical score consists of two staves. The upper staff is in treble clef with a 9/8 time signature. The lower staff is in bass clef with a 9/8 time signature. The music is divided into three measures by double bar lines. The first measure contains a whole rest in the treble and a half-note bass line. The second and third measures feature a treble line with eighth-note patterns and a bass line with quarter-note patterns. The key signature has one sharp (F#).

- Any repeated measure may be altered by dropping one or three eighths, resulting in temporary shifts to 4/4 or 3/4 time, respectively.

The second system of the musical score consists of two staves. The upper staff is in treble clef with a 9/8 time signature. The lower staff is in bass clef with a 9/8 time signature. The music is divided into three measures by double bar lines. The first measure contains a treble line with eighth-note patterns and a bass line with quarter-note patterns. The second and third measures feature a treble line with eighth-note patterns and a bass line with quarter-note patterns. The key signature has one sharp (F#).

The third system of the musical score consists of two staves. The upper staff is in treble clef with a 9/8 time signature. The lower staff is in bass clef with a 9/8 time signature. The music is divided into three measures by double bar lines. The first measure contains a treble line with eighth-note patterns and a bass line with quarter-note patterns. The second and third measures feature a treble line with eighth-note patterns and a bass line with quarter-note patterns. The key signature has one sharp (F#).

The fourth system of the musical score consists of two staves. The upper staff is in treble clef with a 9/8 time signature. The lower staff is in bass clef with a 9/8 time signature. The music is divided into three measures by double bar lines. The first measure contains a treble line with eighth-note patterns and a bass line with quarter-note patterns. The second and third measures feature a treble line with eighth-note patterns and a bass line with quarter-note patterns. The key signature has one sharp (F#).

accel.-----

The fifth system of the musical score consists of two staves. The upper staff is in treble clef with a 9/8 time signature. The lower staff is in bass clef with a 9/8 time signature. The music is divided into three measures by double bar lines. The first measure contains a treble line with eighth-note patterns and a bass line with quarter-note patterns. The second and third measures feature a treble line with eighth-note patterns and a bass line with quarter-note patterns. The key signature has one sharp (F#). The system concludes with a double bar line and a 6/8 time signature.

SOLO

Musical notation for the first system. The top staff is in bass clef with a 6/8 time signature. It contains a short melodic phrase followed by a rest, then a section with diagonal hatching. The bottom staff is in bass clef with a 6/8 time signature, featuring a 'walking bass' line. The text 'a tempo' is written above the bottom staff, and 'and/or:' is written above the hatched section.

Musical notation for the second system. The top staff is in bass clef with a 9/8 time signature. It contains a melodic line with a key signature change to one sharp. The bottom staff is in bass clef with a 9/8 time signature, featuring a walking bass line.

Musical notation for the third system. The top staff is in treble clef with a 9/8 time signature. It contains a melodic line with a key signature change to one sharp. The bottom staff is in bass clef with a 9/8 time signature, featuring a walking bass line.

Musical notation for the fourth system. The top staff is in bass clef with a 9/8 time signature. It contains a melodic line with a key signature change to one sharp. The bottom staff is in bass clef with a 9/8 time signature, featuring a walking bass line.

Musical notation for the fifth system. The top staff is in bass clef with a 6/8 time signature. It contains a melodic line with a key signature change to one sharp. The bottom staff is in bass clef with a 6/8 time signature, featuring a walking bass line. The text 'accel.' is written above the bottom staff. The system ends with an '8vb' marking.

taiga liturgy

Performance notes

- Perform each RITUAL with a sense of ceremony, solemnity, and just a touch of the manic.
- Each RITUAL may be elaborated beyond given instructions, although some have a naturally more transitory nature. No RITUAL should last for more than 60 seconds.

Over the Thanksgiving break of 2012 I took to tormenting my parents' piano with mechanical pencils in as many ways as I could think of, tallying a list dozens of methods long. Gradually these experiments formed into a piece, bringing to mind the brief but cohesive movements of the Orthodox liturgy services. Taiga is the type of dense evergreen forest covering the northern parts of the world.

taiga liturgy

RITUAL ONE

The censer of incense sways.

Hold five pencils tip down in one hand. Brush the pencil tips dramatically across the tuning pins the entire length of the piano. Repeat this gesture slowly and regularly with the sustain pedal depressed throughout.

RITUAL TWO

The ashes fall.

Continue RITUAL ONE, dropping the pencils one by one onto the strings eraser first until all the pencils lie upon the strings.

RITUAL THREE

The depth of the font is sounded.

Repeat the following in turn with each pencil: Insert the pencil tip slightly between the rightmost strings of a note of your choice in the middle range of the piano. Strike the key of those strings with increasing intensity until the pencil is ejected from between the strings with a clatter. Reinsert the pencil firmly. Repeating this process for each pencil results in a prepared array of five notes.

RITUAL FOUR

The first circle dance is joined.

Improvise a series of feverish dances on the five keys affected by the pencils. Then repeat the following in turn with each pencil: Reduce the dance to four notes. Remove the fifth pencil and insert it between the strings of a note slightly lower in the middle range. Briefly resume a five-note texture before repeating the process with another pencil. A new, lower array of notes results. Play a final, fragmented dance.

RITUAL FIVE

The candles are lit.

In rapid succession, ceremoniously remove all the pencils from between the strings, with the sustain pedal down. With a vicious motion, insert the pencils between strings of the lower and mid-lower registers where they overlap, so that each pencil affects a note from both registers. An array of ten notes results.

RITUAL SIX

The second circle dance is joined.

As in RITUAL FOUR, improvise a series of feverish dances on the ten keys affected by the pencils. Asymmetric accents and hammering ostinati should abound. Allow the dance to become so elaborate that it disintegrates into isolated notes and collapses to a halt.

RITUAL SEVEN

The old one speaks.

Again remove all the pencils in rapid succession, with the sustain pedal down. Loosely hold two pencils in each fist, eraser down. Holding the pencils just above the strings, allow them to bounce onto the strings. Weave an arcane, mumbling melody.

RITUAL EIGHT

The children and the birds sing in tongues.

Take one pencil by its middle between the thumb and forefinger of each hand. Roll the thumb to strike the ends alternately against the strings. An intense dialogue should ensue between the hands, spanning across the entire range of the piano.

RITUAL NINE

The bells all ring.

Use the full length of each pencil in each hand to strike across the strings. Bring the dialogue of RITUAL EIGHT to a furious climax. Use the sustain pedal to create and abruptly end harmonic swells.

map of trees

Performance notes

- This movement should embody the idea that an interpretation can grow with every performance. As such, the score gives only the barest indications of rhythmic gestures, register, and texture. The performer should look for opportunities to branch out from the notated form.

The more I have played through this loose map around the keyboard, the more I have stretched the boundaries of the score. Like a forest growing, the work is still essentially the same, but with new interludes popping up here, textures becoming thicker there, the basic ideas soaring higher and reaching further.

map of trees

pretty fast

Musical notation for the 'pretty fast' section. It consists of two systems of piano staves. The first system has a treble clef on the top staff and a bass clef on the bottom staff. The top staff contains a sequence of five notes marked with 'x' above them, with a triplet bracket underneath. The bottom staff contains three notes marked with 'x' above them. The second system is similar, with five notes in the treble and three in the bass. A wavy line connects the two systems, indicating a melodic line. The first system is marked with a piano dynamic *p* and a triplet '3'.

accel-----

Musical notation for the 'accel' section. It features a treble clef on the top staff and a bass clef on the bottom staff. A wavy line starts on the left and moves upwards across the staves. A central box contains two notes, one in the treble and one in the bass. To the right, a dashed line labeled 'accel' indicates an acceleration. The wavy line continues to oscillate across the staves.

as fast as possible

Musical notation for the 'as fast as possible' section. It shows a treble clef on the top staff and a bass clef on the bottom staff. The top staff is mostly empty, with a horizontal line drawn across it. The bottom staff contains a wavy line that oscillates across the staff.

pretty fast

fp right hand: free solo

x	x	x
3	2	1

right hand quasi cadenza

x	x	x	x	x
3				

x	x	x	x	x
3				

x	x	x	x	x
3				

x	x	x
3		

x	x	x
3		

subito *pp* a la chorale

slivers of a crystal forest

Performance notes

- Small but powerful speakers should be placed inside the piano in the space to the left of the lowest strings.
- These speakers should be attached to a volume pedal placed to the right of the piano pedals.
- The volume pedal is connected to an Apple computer (which should sit snugly on top of the right hand side of the piano). If the resulting setup does not produce a satisfactory volume balance between the piano and the speakers, the sound may be routed from the volume pedal to additional house speakers.
- Install the RTcmix interface CMixRun from the included computer disc. The included folder of program and sound files should be moved to the hard drive.
- The performer should prepare by experimenting with each of the soundfiles and altering the various internal parameters as indicated in the score for each section. Familiarity with each file is essential for creating a cohesive and convincing performance.
- For all three sections, the volume pedal should be used regularly to give the computer output more shape and better interaction with the live piano.

One way of looking at this set of movements is as a one-man duet; another would be to say that it aims towards creating a "hyper-piano." Pre-recorded piano samples are mashed together in the program RTcmix and played in various mutations as the program code is manipulated live. The first section, rooted sentinels, features lower, inside-the-piano textures; in the thick uses the computer to create complex rhythms to accompany an improvised melody; fractal leaves uses rapid and even granularized textures. All three may be played as one continuous movement or broken into three separate movements. The electronic samples are all taken from recorded piano sounds.

The title again refers to the taiga of the north. In an inexplicably powerful experience, I was mesmerized for hours while riding a bus across Russia and looking out the window at endless tracts of forest covered in snow and ice. The feeling was one of numerical infinity similar to the way the scriptures refer to the sands of the sea or the stars in the sky – countless trees, countless branches, countless crystals of ice.

slivers of a crystal forest

I. rooted sentinels

A thousand concentric rings bear witness: these dark trunks keep watch from age to age.

- With the audio setup in place and CMixRun operating, open the following program files from the folder: CrossMixBassLine, CrossMixGuitar, CrossMixLow, CrossMixRungMarimba, CrossMixRants, CrossMixScrapes, CrossMixSwipes and CrossMixLowPlay.
- Begin by playing on the 'rungs' or cast iron bars inside the piano and playing the file CrossMixRungMarimba. (Note: Cmd+P is a shortcut for playing any file).
- After this opening, any of the open files can be played in any order. Each file should be played at least once, but not more than twice. A few may layer at the same time. If a file is played a second time, at least one of the internal parameters should be altered within the limits explained below. (Note that once a file has been played, it can be altered and played again, even if the first playback is still ongoing).
- Strive for a balance and evolution between the improvisation at the piano and the playback of files. This movement is played primarily inside the piano, using the strings, tuning pins, cast iron plate and any other resonant part of the piano. A comb or rubber doorstop may also be used to generate sound.
- File durations ("start <"): 45 – 70
- Sample durations ("dur ="): 0.2 - 0.9
- Spacing ("start +="): 0.2 - 0.5

II. in the thick

No straight path lies under the canopy, only a winding way between the looming shafts.

- In CMixRun, close all the files from *rooted sentinels* except: CrossMixBassLine, CrossMixRants, CrossMixScrapes, and CrossMixSwipes. Alter the internal parameters as given below. Open and prepare the following additional files: CrossMixChords, CrossMixHigh, CrossMixJazz and CrossMixDescendingChords.
- Begin by playing any of the above files and gradually layering several at once.
- A single long melody should spin out over the entire length of this section. It should be played by inserting a large comb across a range of strings and plucking notes with the tip of a doorstop, accenting phrases with other sounds inside the piano.
- Most or all files should be playing simultaneously at any given moment. Each file should be played at least once, and up to three times. For at least one of the repetitions the internal parameters should be altered within the given limits.
- File durations ("start <"): 30 - 50
- Sample durations ("dur ="): 0.1 - 0.05
- Spacing ("start +="): 0.2 - 0.7

III. fractal leaves

I will multiply thy seed as the leaves of the forest.

- In CMixRun, leave open the files: CrossMixRants, CrossMixScrapes, CrossMixSwipes, CrossMixChords, CrossMixHigh, CrossMixJazz and CrossMixDescendingChords. Alter the internal parameters as given below. Open and prepare the following additional files: CrossMixHigh2 and CrossMixMix.
- This movement should be played very rapidly, with at least one hand playing nearly constantly. Alternate between repeated gestures and the wildest of improvisations.
- For most of this section there should be many files playing back simultaneously. Each file should be played at least twice, but not more than four times. For at least two of the playbacks, the internal parameters should be altered as indicated below.
- File durations ("start <"): 20 - 40
- Sample durations ("dur ="): 0.04 - 0.07, then 0.009 - 0.02
- Spacing: "start += dur"