

GENERATING MUSICAL MATERIAL

*a playful approach to
nerdy things*

*inspirations, formulas, explorations, exercises, examples, constructions,
compositions, compositional material, etudes*

by Giotto Roussies

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Twelve Tone Structures

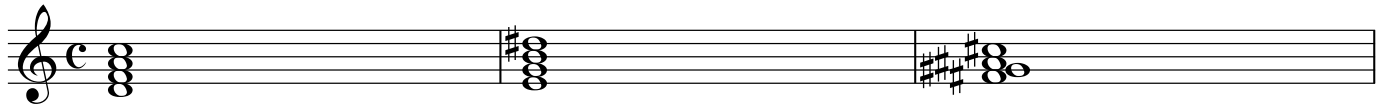
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Soloing over the Chords

1. Let's go back to the original three chords and play around with other approaches. We can treat them as changes for Jazz improvisation and play the voicings in the left hand while the right hand does what a Jazz improviser would do when seeing these chords on a lead sheet. the first choice for scales would probably be: D dorian, E melodic minor, F# ionian.

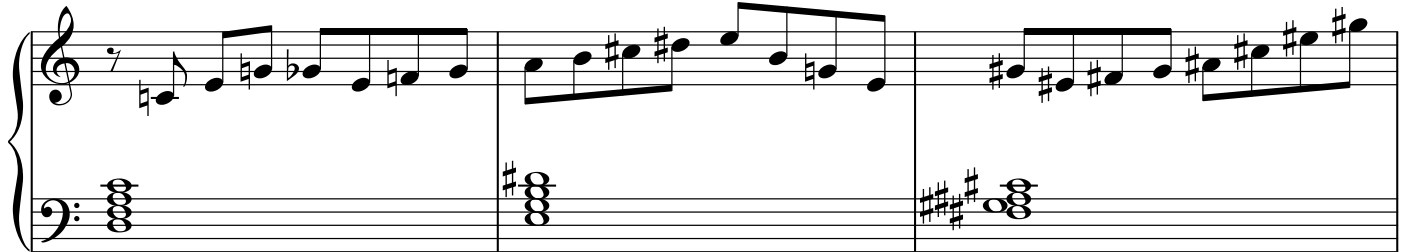
Also try to change the chords every second and fourth bar.
Try to play the left hand sequence with inversions.

Dm⁷ Em(maj7) F#(add2)



2. Here are some fun Jazz lines.

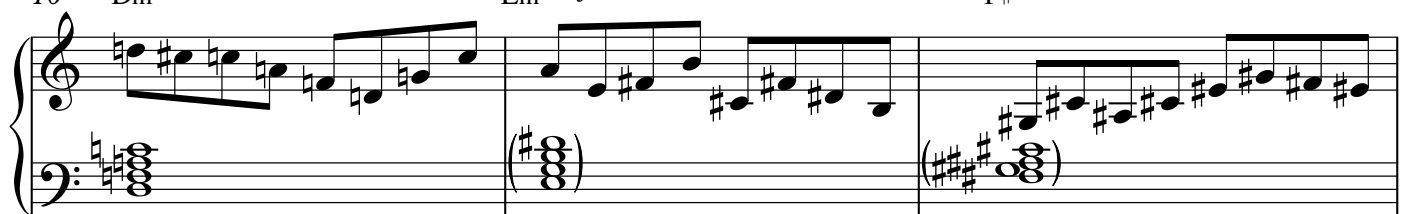
4 Dm⁷ Em(maj7) F#(add2)



7 Dm⁷ Em(maj7) F#(add2)



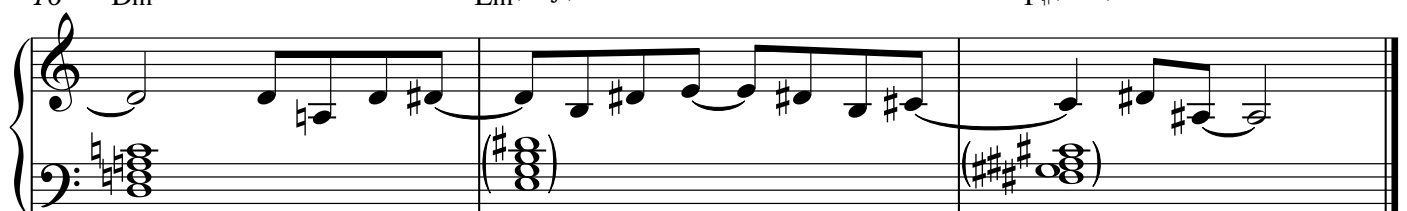
10 Dm⁷ Em(maj7) F#(add2)



13 Dm⁷ Em(maj7) F#(add2)



16 Dm⁷ Em(maj7) F#(add2)



12 Tone Structures

Harmonic Movement 1.

How can I mix these chords to create other harmonic forms?

1. Let's get back to the three blocks we started with.

Musical notation showing three chords on a single staff: Dm^7 , $Em(maj^7)$, and $F^\#(add^2)$.

2. First let's pair them up by stacking them on top of each other consecutively. This harmony is very dense so let's thin it out a little bit.

Musical notation showing three pairs of chords stacked on top of each other on a grand staff. The top staff contains $Em(maj^7)$, $F^\#(add^2)$, and Dm^7 . The bottom staff contains Dm^7 , $Em(maj^7)$, and $F^\#(add^2)$.

3. So we make pairs out of each block and pair it with the pairs of the next. Wow! this is a cool chord mixing tool! check out the colors.

Musical notation showing three pairs of chords stacked on top of each other on a grand staff. The top staff contains $Em(maj^7)$, $F^\#(add^2)$, and Dm^7 . The bottom staff contains Dm^7 , $Em(maj^7)$, and $F^\#(add^2)$.

4. Here is how we could call the chords.

Musical notation showing six chords on a grand staff with their theoretical names: $D^5(add^6/9)$, $F^9(omit^3)$, $Bmaj^7(sus^4)/E$, $A^b(sus^4)/G$, $F^\#maj^7(\#^9)$, and D^bmaj^7/A^b .

5. Let's see what colors we get when playing the upper pairs in reversed order. This feels a little more dynamic because it creates a counter movement to the lower voices. Also the harmonic colors sound interesting. How can we take up the sequence?

Musical notation showing six chords on a grand staff in reversed order: $E^b(b^5)/D$, $Fmaj^7(\#^{11}omit^3)$, E^6 , $E^b m/G$, $F^\#maj^7(b^5)$, and $Dmaj^7(omit^3)/G^\#$.

6. Let's do the same thing with the inversions and we end up with this. Try to name the sounds of the chords.

First system of musical notation for exercise 6. It consists of a grand staff with a treble clef on the upper staff and a bass clef on the lower staff. The key signature has two sharps (F# and C#). The music is composed of six measures of chords, each containing multiple notes in both hands, illustrating various chord inversions.

Second system of musical notation for exercise 6, continuing the sequence of six measures of chords in a grand staff with two sharps in the key signature.

7. Now what can we do with this? Let's play around and try to find some variations on how to orchestrate the sequence. We could arpeggiate the whole thing.

First system of musical notation for exercise 7. It shows the same chord sequence as exercise 6, but the notes are arpeggiated. The treble clef staff has a 'z' at the beginning of each measure, indicating rests. The bass clef staff contains the arpeggiated notes. The key signature has two sharps. The system ends with 'ETC...'.

8. We can change the directions...

First system of musical notation for exercise 8. It shows the same chord sequence as exercise 6, but with different note directions (up and down bows or breaths). The treble clef staff has a 'z' at the beginning of each measure. The bass clef staff contains the notes with stems indicating direction. The key signature has two sharps. The system ends with 'ETC...'.

9. ... or randomize the order of the notes inside of the blocks.

First system of musical notation for exercise 9. It shows the same chord sequence as exercise 6, but with randomized note order within each block. The treble clef staff has a 'z' at the beginning of each measure. The bass clef staff contains the notes with stems indicating direction. The key signature has two sharps. The system ends with 'ETC...'.

10. ...or use piano techniques that are similar to drumming and combine intervals with arpeggios.

First system of musical notation for exercise 10. It shows the same chord sequence as exercise 6, but with piano techniques similar to drumming (accents, staccato) and combined intervals with arpeggios. The treble clef staff has a 'z' at the beginning of each measure. The bass clef staff contains the notes with stems indicating direction. The key signature has two sharps. The system ends with 'ETC...'.

11. This one is purely intervallic drumming.

ETC...

Musical notation for exercise 11, showing intervallic drumming in 6/4 time. The notation consists of two staves, treble and bass clef, with a common time signature of 6/4. The music is composed of rhythmic patterns of eighth and sixteenth notes, primarily using intervals of a second and a third, creating a percussive effect.

12. These examples can be handled like exercises. Try to play them through the whole sequence as written in point 6.

I advise repeating single bars before going to the whole sequence.

All these exercises will give you a lot of flexibility and ideas when it comes to free improvisation or composition.

Adjustments and Variations

13. The question arises: "do these examples all comply to the twelve tone rule?" and the answer is sadly no.

This is due to the fact that we have three blocks of four notes and can only pair two at a time, so

one Block either stays alone, or, like we did is matched with one block that has already been used thus breaking the rule by repeating notes before all twelve have been played. This example shows a clean 12 tone approach.

In this case I just didnt mix "the outsider" F#add2 with another block but left it standing alone.

Musical notation for exercise 13, showing a 12-tone approach in 6/4 time. The notation consists of two staves, treble and bass clef, with a common time signature of 6/4. The music is composed of chords and intervals, primarily using the notes of the F# major scale (F#, G#, A, B, C, D, E, F#), with some variations in the bass line.

14. When listening to this, it feels like the F# Block is our point of relief. Let's hear into the variations with the other two blocks as "outsiders"

Musical notation for exercise 14, showing variations with the F# block as a point of relief. The notation consists of two staves, treble and bass clef, with a common time signature of 6/4. The music is composed of chords and intervals, primarily using the notes of the F# major scale (F#, G#, A, B, C, D, E, F#), with some variations in the bass line.

Musical notation for exercise 14, showing variations with the F# block as a point of relief. The notation consists of two staves, treble and bass clef, with a common time signature of 6/4. The music is composed of chords and intervals, primarily using the notes of the F# major scale (F#, G#, A, B, C, D, E, F#), with some variations in the bass line.

15. How do we make this sound more interesting?

Since the 12 tone rule states that you can repeat a pitch once all 11 others were played,

we can now change the pairs and the outsiders each bar. Note that I had to do some adjustments

to omit tone repetitions by pairing different inversions.

Musical notation for exercise 15, showing adjustments to make the sound more interesting. The notation consists of two staves, treble and bass clef, with a common time signature of 6/4. The music is composed of chords and intervals, primarily using the notes of the F# major scale (F#, G#, A, B, C, D, E, F#), with some variations in the bass line.

12 Tone Structures Harmonic movement 2.

what if I take two notes from each block to create six-note chords?

1. Lets pair up our chords first...we'll put them into groups(1. and 2.) so we can easily refer to them later.

1. Dm^7 1. 2. $Em^{(maj7)}$ 1. 2. $F^\#(add2)$ 1. 2.

2. ...and stack them up by group 1. and 2. and in the original order(d-e-f#) from bottom to top!

Group 1. d-e-f# Group 1. e-f#-d Group 1. f#-d-e

Group 2. d-e-f# Group 2. e-f#-d Group 2. f#-d-e

3. Let's go back to step one and invert the intervals. That way we get a whole new set of voicings.

Group 1. inv. d-e-f# Group 1. inv. e-f#-d Group 1. inv. f#-d-e

Group 2. inv. d-e-f# Group 2. inv. e-f#-d Group 2. inv. f#-d-e

4. Note that group 1. covers 6 of our 12 needed pitches and group 2 holds the second half. In order for us to create a 12 tone sequence we just have to combine group 1 with group 2.

The image shows two musical staves. The first staff contains six chords labeled: Group 1. d-e-f#, Group 2. d-e-f#, Group 1. e-f#-d, Group 2. e-f#-d, Group 1. f#-d-e, and Group 2. f#-d-e. The second staff contains six inverted chords labeled: Group 1. inv. d-e-f#, Group 2. inv. d-e-f#, Group 1. inv. e-f#-d, Group 2. inv. e-f#-d, Group 1. inv. f#-d-e, and Group 2. inv. f#-d-e. Each chord is represented by a piano-style chord diagram with notes on a grand staff.

Now we have two pretty sequences, the first one is a little bit more "tonally stable" since it stays in the same material for 3 chords before changing colors and the second one is the one that complies to the rules by alternating quickly between the two tonal masses. Before going on in collecting material lets play around with the sequences. As with all the chordal sequences we can always apply these concepts: Arpeggiation, Permutation, Intervallic drumming, Looping, adding rhythm, using the left hand as accompaniment for improvisation. Pick one of them and start applying the concepts! Here are some examples:

5. This is a groove in 11/4 (I kept the barlines in 4 and 3 so it's more convenient to read) Take it through the whole sequence. you can even try to change the chords immediately to keep the 12 tone rule.

The image shows a musical score for a groove in 11/4 time. It consists of two staves: a treble clef staff and a bass clef staff. The music is divided into measures with bar lines. The first two measures are in 4/4 time, and the last two measures are in 3/4 time. The notation includes various rhythmic values and chord symbols.

6. Here is another variation of the groove. I flipped the order of the single notes and changed the rhythm to what feels like a 6/4 pattern. ETC...

The image shows a musical score for a variation of the groove in 6/4 time. It consists of two staves: a treble clef staff and a bass clef staff. The music is divided into measures with bar lines. The notation includes various rhythmic values and chord symbols, with a final measure marked "ETC..."

7. Here is a high difficulty drill I came up with: Take a rhythm, that in it's number of rhythmical events doesn't match the pattern of the hands and move it through the pattern anyway. Try to get it right with one chord first and then move on to even change the chords like if nothing happened. Here is an example: We'll take a rhythm in 9/8 that has just one event more than our hand-note distribution-pattern.

This is our Rhythm:

It is actually in 9/8 but to make it easier I wrote it down in 9/4 so the up and downbeats can be felt more easily.

The image shows a musical score for a high difficulty drill in 9/4 time. It consists of a single treble clef staff. The music is divided into measures with bar lines. The notation includes various rhythmic values and chord symbols, with a final measure marked with a double bar line and a 4/4 time signature.

This is our pattern: I kept it fairly easy. It just has a downward movement. The hands play right, right , left left.

Musical notation for a simple downward pattern in 4/4 time. The right hand starts with a chord of G4, A4, B4, C5 (F# major triad) and then moves down to G4. The left hand starts with a chord of G2, B2, D3 (G major triad) and then moves down to G2. The piece ends with a double bar line and a 5/4 time signature.

And this is how it looks like when we superimpose the rhythm over the pattern:

Musical notation showing the first system of a sequence. The right hand starts with a chord of G4, A4, B4, C5 (F# major triad) and then moves down to G4. The left hand starts with a chord of G2, B2, D3 (G major triad) and then moves down to G2. The piece ends with a double bar line and a 5/4 time signature.

Musical notation showing the second system of a sequence. The right hand starts with a chord of G4, A4, B4, C5 (F# major triad) and then moves down to G4. The left hand starts with a chord of G2, B2, D3 (G major triad) and then moves down to G2. The piece ends with a double bar line and a 5/4 time signature.

8. Now lets change the chords and complete the sequence.

Musical notation showing the third system of a sequence. The right hand starts with a chord of G4, A4, B4, C5 (F# major triad) and then moves down to G4. The left hand starts with a chord of G2, B2, D3 (G major triad) and then moves down to G2. The piece ends with a double bar line and a 5/4 time signature.

Musical notation showing the fourth system of a sequence. The right hand starts with a chord of G4, A4, B4, C5 (F# major triad) and then moves down to G4. The left hand starts with a chord of G2, B2, D3 (G major triad) and then moves down to G2. The piece ends with a double bar line and a 5/4 time signature.

Musical notation showing the fifth system of a sequence. The right hand starts with a chord of G4, A4, B4, C5 (F# major triad) and then moves down to G4. The left hand starts with a chord of G2, B2, D3 (G major triad) and then moves down to G2. The piece ends with a double bar line and a 5/4 time signature.

The first system of music consists of two staves. The top staff is in treble clef and the bottom in bass clef. The time signature changes from 5/4 to 4/4 at the first measure line. The music features various chords and melodic lines, including a prominent eighth-note melody in the bass staff.

The second system of music continues the piece. It features a 5/4 to 4/4 time signature change. The annotation "new period starts here" is placed above the treble staff at the beginning of the second measure. The music includes a melodic line in the treble staff and a bass line in the bass staff.

The third system of music concludes the piece. It features a 5/4 to 4/4 time signature change. The notation ends with a double bar line and the text "ETC..." to the right. The system contains two staves with various musical notations.

Etude for the left hand

10. Here is a slightly different sequence than point 4. it is based on the original inversions of the chords. You will understand what I mean when playing it. This is an Etude for the left hand only.

The musical notation for the left hand etude consists of four staves of bass clef music in 6/8 time. The first staff begins with a treble clef and a 6/8 time signature. The melody is composed of eighth and sixteenth notes, with various accidentals (sharps, flats, naturals) indicating the specific intervals and chromaticism. The second and third staves continue the melodic line, showing a series of descending and ascending intervals. The fourth staff concludes the piece with a double bar line and repeat dots.

Etude for the right hand

11. Here is the same thing but for the right hand. The sequence can maybe be described as a ladder-approach (2up, one down etc...)

The musical notation for the right hand etude consists of four staves of treble clef music in 6/8 time. The melody follows a similar pattern to the left hand etude, characterized by eighth and sixteenth notes and chromatic movement. The first staff starts with a treble clef and a 6/8 time signature. The sequence of notes and accidentals is designed to be played on a single hand, illustrating the 'ladder-approach' mentioned in the text. The piece ends with a double bar line and repeat dots on the fourth staff.

Different pairings

12. I investigated more and asked myself this: knowing that group 1. and group 2. are complementary, that means that group 2. has the missing 6 tones that group 1. doesn't have and vice versa, why don't we pair them up in one chord, how would that sound? So I took the previous sequence from point 10. and started stacking up the chords next to each other each hand separately, meaning the left hand material (bass clef) stayed together as one family and the right hand material formed another.

Check out these pretty sounds. Do they also comply to the 12 tone rule?

Since the colors are quite dense also try to play the chords one octave higher to keep the colors from drowning in "the swamp" of the lower register.

First system of musical notation for exercise 12. It consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The time signature is 4/4. The right hand (treble clef) contains six chords, each represented by a circle with a vertical line through it, indicating a specific chord structure. The left hand (bass clef) contains six chords, also represented by circles with vertical lines, stacked vertically. The chords in the right hand are: C major, F major, Bb major, Eb major, Ab major, and Db major. The chords in the left hand are: C major, F major, Bb major, Eb major, Ab major, and Db major.

Second system of musical notation for exercise 12. It consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The time signature is 4/4. The right hand (treble clef) contains six chords, each represented by a circle with a vertical line through it. The left hand (bass clef) contains six chords, also represented by circles with vertical lines, stacked vertically. The chords in the right hand are: C major, F major, Bb major, Eb major, Ab major, and Db major. The chords in the left hand are: C major, F major, Bb major, Eb major, Ab major, and Db major.

13. Let's see what we get when applying the same thing to the "right hand etude"

First system of musical notation for exercise 13. It consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The time signature is 4/4. The right hand (treble clef) contains six chords, each represented by a circle with a vertical line through it. The left hand (bass clef) contains six chords, also represented by circles with vertical lines, stacked vertically. The chords in the right hand are: C major, F major, Bb major, Eb major, Ab major, and Db major. The chords in the left hand are: C major, F major, Bb major, Eb major, Ab major, and Db major.

Second system of musical notation for exercise 13. It consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The time signature is 4/4. The right hand (treble clef) contains six chords, each represented by a circle with a vertical line through it. The left hand (bass clef) contains six chords, also represented by circles with vertical lines, stacked vertically. The chords in the right hand are: C major, F major, Bb major, Eb major, Ab major, and Db major. The chords in the left hand are: C major, F major, Bb major, Eb major, Ab major, and Db major.

14. Let's ask the 12 tone question: "Do the pitches repeat only before all 11 others have been played?" the answer is no. But we can change this easily. Looking at the original sequence (nr 4.) we know that two hands always form a group of 6 notes summing up always the same 6 notes. Group 1. has d, e, f#, a, b and group 2 has db, eb, f, g, ab, c. Since we know that the right hand always has the complementary chord to the left(in the original sequence) we can just take turns in playing one chord from the left hand row (nr. 12) and one chord from the right hand row(nr.13). Like this:

The first system of musical notation consists of two staves. The treble clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A). The bass clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A).

The second system of musical notation consists of two staves. The treble clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A). The bass clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A).

The third system of musical notation consists of two staves. The treble clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A). The bass clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A).

The fourth system of musical notation consists of two staves. The treble clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A). The bass clef staff contains six chords: a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), a D major triad (D, F#, A), and a D major triad (D, F#, A).

15. Another sequence that is close by is to organize the pairs by ascending inversions. This means that the two first notes in both the left and the right hand will follow the inversions of D-7 + one note of the E-maj7 in the first four Chords, then the same happens with E-maj7 + one note of F#add2, and then F#add2 + one note of D-7. This is not the way I have previously thought about it but it makes things way easier and it also explains why the chords sounded more tonal to me. In fact it is always a drop2-drop1 voicing of the original four blocks (D-7, E-maj7, F#add2) plus two notes of the next one. We will soon take this method further but let's look at this one first.

The first system of musical notation for exercise 15 consists of four measures. Each measure contains two staves (treble and bass clef) with chords. The chords are: D-7 (D, F, A, C), E-maj7 (E, G#, B, D), F#add2 (F#, A, C, E), and D-7 (D, F, A, C). The notes are arranged in a drop2-drop1 voicing.

The second system of musical notation for exercise 15 consists of four measures. Each measure contains two staves (treble and bass clef) with chords. The chords are: E-maj7 (E, G#, B, D), F#add2 (F#, A, C, E), D-7 (D, F, A, C), and E-maj7 (E, G#, B, D). The notes are arranged in a drop2-drop1 voicing.

The third system of musical notation for exercise 15 consists of four measures. Each measure contains two staves (treble and bass clef) with chords. The chords are: F#add2 (F#, A, C, E), D-7 (D, F, A, C), E-maj7 (E, G#, B, D), and F#add2 (F#, A, C, E). The notes are arranged in a drop2-drop1 voicing.

16. Now let's do the same thing with the right hand material. It is the opposite of in the left hand. We start of with one note from E-maj7 and then two notes of F#add2, then one from F#add2 and two from D-7 and the one from D-7 and two from E-maj7. Let's remember that right and left in combination

The first system of musical notation for exercise 16 consists of four measures. Each measure contains two staves (treble and bass clef) with chords. The chords are: E-maj7 (E, G#, B, D), F#add2 (F#, A, C, E), D-7 (D, F, A, C), and E-maj7 (E, G#, B, D). The notes are arranged in a drop2-drop1 voicing.

The second system of musical notation for exercise 16 consists of four measures. Each measure contains two staves (treble and bass clef) with chords. The chords are: F#add2 (F#, A, C, E), D-7 (D, F, A, C), E-maj7 (E, G#, B, D), and F#add2 (F#, A, C, E). The notes are arranged in a drop2-drop1 voicing.

The third system of musical notation for exercise 16 consists of four measures. Each measure contains two staves (treble and bass clef) with chords. The chords are: D-7 (D, F, A, C), E-maj7 (E, G#, B, D), F#add2 (F#, A, C, E), and D-7 (D, F, A, C). The notes are arranged in a drop2-drop1 voicing.

17. Let's remember that right and left in combination will make a 12 tone certified sequence. ;)

The image shows three systems of piano music for exercise 17. Each system consists of a treble clef staff and a bass clef staff. The music is composed of chords and intervals across eight measures. The first system starts with a D major chord in the right hand and a D minor chord in the left hand. The second system starts with an E major chord in the right hand and an E minor chord in the left hand. The third system starts with an F# major chord in the right hand and an F# minor chord in the left hand. The music progresses through various chord voicings and intervals, creating a 12-tone sequence.

18. Now let's spin on the thread from nr. 15. and say: "Good lets take a drop 1- drop 2 voicing of the first chord (D-7) and then add one note from the second chord(E-maj7) in the left hand and one note from the third chord(F#add2) in the right hand, that way we have a bit of all the chords in one voicing.

I have seperated the two borrowed tones from the open position voicing. I like the shady feel that the harsh dissonances create especially in the later two variations.

The image shows a system of piano music for exercise 18. It consists of a treble clef staff and a bass clef staff. The music is composed of complex chord voicings and dissonances across eight measures. The first measure features a D-7 chord in the right hand and an E-maj7 chord in the left hand. The second measure features an F#add2 chord in the right hand and a D-7 chord in the left hand. The music progresses through various chord voicings and intervals, creating a 12-tone sequence.

19. Here is the method, applied to the right hand pattern. The right hand is kind of a mirrored version of the left hand. Also here the versions with D-7 and E-7 as base sound very sharp.

This time it will not complete the left hand sequence to make it a 12 tone sequence. This is because we always have a complete Block and at the same time two representants of the other two Blocks. This will always ensure tone repetitions.

We will follow up on that in the next example.

The image shows a system of piano music for exercise 19. It consists of a treble clef staff and a bass clef staff. The music is composed of complex chord voicings and dissonances across eight measures. The first measure features a D-7 chord in the right hand and an E-7 chord in the left hand. The second measure features an E-7 chord in the right hand and a D-7 chord in the left hand. The music progresses through various chord voicings and intervals, creating a 12-tone sequence.

20. Let's look for complementary 12 tone chords for the sequence of nr. 18. The way to achieve that is too look at what notes are missing. The notes that are missing are from the two "other blocks" and there are always three of them. So if we take the first chord of sequence nr 18. D-7 + E- + F# the complementary chord would be E- minus the note E + F#add2 minus the note ab. Before deciding on how to organize the voicings, lets look at our material.

Exercise 20 shows three chord voicings in a piano style. The first chord is labeled **F#add2 / E-maj7**, the second is **D-7 / F#add2**, and the third is **E-maj7 / Dm7**. The notes are arranged in a block-like fashion across the piano keyboard.

21. Let's add movement by splitting up the voicings into an interval and a single note. Ricght and left hand mirror each other in the direction of movement.

Exercise 21 shows the same three chord voicings as exercise 20, but with notes split into intervals and single notes to create movement. The first chord is labeled **F#add2 / E-maj7**, the second is **D-7 / F#add2**, and the third is **E-maj7 / Dm7**. The notes are arranged in a way that allows for movement in both hands.

22. Let's pair them up. I changed the inversions of the later sequence so that it would have an ascending movement in the top voices. This is to match the movement of the sequence 18.

Exercise 22 shows the first system of the three chord voicings, with notes paired up and inversions changed to create an ascending movement in the top voices. The first chord is labeled **F#add2 / E-maj7**, the second is **D-7 / F#add2**, and the third is **E-maj7 / Dm7**.

Exercise 22 shows the second system of the three chord voicings, with notes paired up and inversions changed to create an ascending movement in the top voices. The first chord is labeled **F#add2 / E-maj7**, the second is **D-7 / F#add2**, and the third is **E-maj7 / Dm7**.

Exercise 22 shows the third system of the three chord voicings, with notes paired up and inversions changed to create an ascending movement in the top voices. The first chord is labeled **F#add2 / E-maj7**, the second is **D-7 / F#add2**, and the third is **E-maj7 / Dm7**.

23. This is quite a sweet sequence. To dive into the beauty of these dense sounds, it is advisable to play them slow and with a nice and gentle touch. Imagine it is a fragile and precious diamond sculpture. Think about how many layers it took us to get here. Note that every bar contains 12 notes and is in itself a valid 12 tone sequence. Note that each line contains a specific color. Line 1 has Dm7 as a base + always one note from E-maj7 and one from F#add2, followed by its complementary chord. Line 2. and 3. proceed in the same way, applying this method to the other collors (E-maj7 and F#add2)
 Now we will combine them by playing the first bars of line 1., 2., and 3. in a row , then the second etc...
 On top of that we will get playfull and add some rhythm plus some variations, using some random "drumming tecniques" for the right and left hand. Play arround with holding notes or intervalls longer than written so that notes overlap create a sense of harmony. Try keeping together the blocks as marked with lines. I made a sketch of a tune out of it.

Ambiguity

The musical score 'Ambiguity' is presented in five systems, each with a treble and bass staff. The notation is highly chromatic and dense, featuring numerous accidentals (sharps, flats, naturals, and double flats) and overlapping notes. Vertical dashed lines are used throughout to delineate measures and phrases. The piece is characterized by its complex harmonic structure and rhythmic variations, as described in the accompanying text.

12 Tone Structures

Harmonic movement 3.

More Chords

1. Departing from the two hexatonics we have found, we can also choose to organize the notes by different rules.

DMaj Family DbMaj Family

2. My set of rules were: Let's always put a fifth in the left hand and see what tones are missing to complete the "Family". Let's organize these notes in the right hand and alternate between the two Families. Let's create a downward motion. So I came up with this. Play the sequence over the whole range of the piano starting on the very top moving downwards.

3. Let's play with this sequence a bit. Here is a nice exercise with this sequence. Start on the highest possible point of the Keyboard and take it all the way down to the lowest.

ETC...

waterfall etude

4. Here is a waterfall etude. We take one voicing through 4 octaves and back down before changing to the next. It is important to keep the right and left hand distribution of the notes the same: The bottom two notes in the left, and the other four in the right.

The first system of the waterfall etude consists of two measures. The first measure shows the right hand playing a sequence of notes: C4, D4, E4, F4, G4, A4, B4, C5, with a slur over the last four notes. The left hand plays a sequence of notes: C3, D3, E3, F3, G3, A3, B3, C4, with a slur over the last four notes. The second measure shows the right hand playing a sequence of notes: C5, B4, A4, G4, F4, E4, D4, C4, with a slur over the last four notes. The left hand plays a sequence of notes: C4, B3, A3, G3, F3, E3, D3, C3, with a slur over the last four notes. The time signature is 3/4.

The second system of the waterfall etude consists of two measures. The first measure shows the right hand playing a sequence of notes: C5, B4, A4, G4, F4, E4, D4, C4, with a slur over the last four notes. The left hand plays a sequence of notes: C4, B3, A3, G3, F3, E3, D3, C3, with a slur over the last four notes. The second measure shows the right hand playing a sequence of notes: C4, B3, A3, G3, F3, E3, D3, C3, with a slur over the last four notes. The left hand plays a sequence of notes: C3, B2, A2, G2, F2, E2, D2, C2, with a slur over the last four notes. The time signature is 3/4.

The third system of the waterfall etude consists of two measures. The first measure shows the right hand playing a sequence of notes: C4, B3, A3, G3, F3, E3, D3, C3, with a slur over the last four notes. The left hand plays a sequence of notes: C3, B2, A2, G2, F2, E2, D2, C2, with a slur over the last four notes. The second measure shows the right hand playing a sequence of notes: C3, B2, A2, G2, F2, E2, D2, C2, with a slur over the last four notes. The left hand plays a sequence of notes: C2, B1, A1, G1, F1, E1, D1, C1, with a slur over the last four notes. The time signature is 3/4.

The fourth system of the waterfall etude consists of two measures. The first measure shows the right hand playing a sequence of notes: C3, B2, A2, G2, F2, E2, D2, C2, with a slur over the last four notes. The left hand plays a sequence of notes: C2, B1, A1, G1, F1, E1, D1, C1, with a slur over the last four notes. The second measure shows the right hand playing a sequence of notes: C2, B1, A1, G1, F1, E1, D1, C1, with a slur over the last four notes. The left hand plays a sequence of notes: C1, B0, A0, G0, F0, E0, D0, C0, with a slur over the last four notes. The time signature is 3/4. The text "ETC..." is written to the right of the system.

modified waterfall etude

4. Here is a modified waterfall etude. We change the voicing everytime, going up this way for 4 octaves and coming back down just 3 octaves. This way the sequence shifts upwards.

The image displays a musical score for a piece titled "modified waterfall etude". The score is written for piano and consists of six systems, each with a grand staff (treble and bass clefs). The music is characterized by a "waterfall" pattern, where the melody moves up and then down, with the starting point of the sequence shifting upwards in each system. The key signature is one flat (B-flat major or D minor), and the time signature is 4/4. The score includes various musical notations such as slurs, ties, and dynamic markings. The first system shows the initial sequence starting in the bass clef and moving up. The second system shows the sequence moving up further. The third system shows the sequence moving up even higher. The fourth system shows the sequence moving up to a high register. The fifth system shows the sequence moving down from the high register. The sixth system shows the sequence moving down further, illustrating the "waterfall" effect where the sequence shifts upwards over time.

First system of musical notation. The treble clef staff contains a melodic line with a slur over the first two measures and a long slur over the second measure. The bass clef staff contains a bass line with a slur over the first two measures.

Second system of musical notation. The treble clef staff contains a melodic line with a slur over the first two measures and a long slur over the second measure. The bass clef staff contains a bass line with a slur over the first two measures.

Third system of musical notation. The treble clef staff contains a melodic line with a slur over the first two measures and a long slur over the second measure. The bass clef staff contains a bass line with a slur over the first two measures.

Fourth system of musical notation. The treble clef staff contains a melodic line with a slur over the first two measures and a long slur over the second measure. The bass clef staff contains a bass line with a slur over the first two measures.

Fifth system of musical notation. The treble clef staff contains a melodic line with a slur over the first two measures and a long slur over the second measure. The bass clef staff contains a bass line with a slur over the first two measures.

First system of musical notation, featuring a treble and bass clef. The treble clef staff begins with a key signature of one flat (B-flat) and contains a melodic line with eighth and sixteenth notes, including a sharp sign (#). The bass clef staff provides a harmonic accompaniment with chords and moving lines. A large slur spans across both staves, encompassing the first two measures.

Second system of musical notation. The treble clef staff continues the melodic line with a series of sixteenth-note runs and slurs. The bass clef staff remains mostly empty, with a few notes appearing in the second measure. A large slur covers the first two measures of the treble staff.

Third system of musical notation. The treble clef staff features a melodic line with eighth notes and slurs. The bass clef staff has a few notes in the first measure, followed by a large slur that spans across both staves for the first two measures.

Fourth system of musical notation. The treble clef staff contains a complex melodic line with many sixteenth notes and slurs. The bass clef staff has a few notes in the second and third measures. A large slur covers the first two measures of the treble staff.

Flipping around the bass

6. When playing around with the sequence of 2. I came across a cool variation that comes from combining the right hand with a set of fifth that belongs to the opposite family. It took a while to find the smoothest sounds. Sometimes the order of the left hand is just flipped, sometimes I had to borrow them from afar. This is the original sequence:

The original sequence is a piano arrangement in 4/4 time. The right hand (treble clef) plays a sequence of chords: C#7(11,13), Dsus9, C7(9,13)/F, A7alt, Ab-7b5,9, BMaj7#5, and C7#11. The left hand (bass clef) plays a sequence of chords: C#7(11,13), Dsus9, C7(9,13)/F, A7alt, Ab-7b5,9, BMaj7#5, and C7#11. The chords are played in a sequence that is a variation of the original sequence.

7. And this is the variation:

The variation is a piano arrangement in 4/4 time. The right hand (treble clef) plays a sequence of chords: C#7(11,13), Dsus9, C7(9,13)/F, A7alt, Ab-7b5,9, BMaj7#5, and C7#11. The left hand (bass clef) plays a sequence of chords: C#7(11,13), Dsus9, C7(9,13)/F, A7alt, Ab-7b5,9, BMaj7#5, and C7#11. The chords are played in a sequence that is a variation of the original sequence.

The sounds now remind me of Jazz chords with some cryptical information. This is what the chord symbols could look like: C#-7(11,13), Dsus9, C7(9,13)/F, A7alt (with a wrong fifth), Ab-7b5,9 (with a wrong fifth), BMaj7#5(with a natural fifth too) C7#11, EMaj7(13) with a flat nine. Almost every chord has a slightly wrongish dissonance in it that makes it drop out of the standard Jazz-harmony zone.

12 Tone Structures

Harmonic Movement 4

4 Triads

1. We came from creating a 12 tone row by finding 3 blocks of four notes to cover up all 12 notes, now let's find four blocks of four notes each that cover all 12 tones.

C Db⁺ D⁺ Abm

The image shows four triads on a single staff in treble clef. The first triad is C major (C-E-G). The second is Db major (Db-F-A). The third is D major (D-F#-A). The fourth is Ab minor (Ab-Cb-Eb).

2. Lets create an ascending row by inverting the chords

5 C Db⁺ D⁺ Abm C Db⁺ D⁺ Abm C Db⁺ D⁺ Abm

The image shows a sequence of 12 chords on a single staff in treble clef. The chords are: C, Db+, D+, Abm, C, Db+, D+, Abm, C, Db+, D+, Abm. The notes are arranged in an ascending sequence across the staff.

3. Let's pair the chords up by starting the right hand one beat later and one octave higher

8 Abm C Db⁺ D⁺ Abm C Db⁺ D⁺ Abm C Db⁺ D⁺

C Db⁺ D⁺ Abm C Db⁺ D⁺ Abm C Db⁺ D⁺ Abm

The image shows a piano setting with two staves. The right hand (treble clef) plays chords starting from the second beat of each measure. The left hand (bass clef) plays chords starting from the first beat. The sequence of chords is: Abm, C, Db+, D+, Abm, C, Db+, D+, Abm, C, Db+, D+.

4. Let's split up the six note chords into groups of three notes by always skipping one tone. We end up with some open position triads. Note that this technique can be used to mix two random triads with two hands. This is done by pairing the outer notes of a triad with the middle note of the other triad. It is quite a natural movement on the piano.

11 Cm E A F(sus2) Bb F#m B Bb7(omit5) E+ G+ Db(b5) Ab+ D(b5) Bbm Ab(sus2) Bm

The image shows a piano setting with two staves. The right hand (treble clef) plays single notes or dyads, and the left hand (bass clef) plays single notes or dyads. The sequence of chords is: Cm, E, A, F(sus2), Bb, F#m, B, Bb7(omit5), E+, G+, Db(b5), Ab+, D(b5), Bbm, Ab(sus2), Bm.

15 Em Ab F Gm6(omit5) Gb Db+ Ab° Ebm

The image shows a piano setting with two staves. The right hand (treble clef) plays single notes or dyads, and the left hand (bass clef) plays single notes or dyads. The sequence of chords is: Em, Ab, F, Gm6(omit5), Gb, Db+, Ab°, Ebm.

12 Tone Structures

Harmonic movement 5

creating scales

1. Let's now mix always two of the original 3 chords with each other and see what colors we get. We will get three scales of eight notes. All of the scales will contain more than one halfstep. It makes sense to look at the scales in non modal way, but more like a vessel that contains different sounds. Also, I will stack the chords in the most harmonic possible way (choosing intervalls of a major 7th rather than its inverted dissonant counterpart, the minor 9th).

Mode 1.

Dm7 + Em(maj7) Scale

This scale looks like a dorian scale with a chromatic tone between the first and second degree. If you want to treat the note more like a color I would most likely attribute this scale to an A minor sound with an optional sharp 4 or flat 5. It would also work on a G7 Chord with an optional b13 sound or an F Major Lydian with a "wrongish" optional flat seven.

Mode 2.

F#(add2) + Dm7 Scale

This scale looks quite odd. It does not fit into the concept of using a known scale with an extra note. It rather reminds me of Messiaen's Mode 3 (three blocks of the first three notes of a minor scale, a major third apart or halfstep-halfstep-wholestep x3) only with a missing note (in this case E). As a sound I would prefer to play it over some kind of super altered F#Major7 with a #9, #11, b13 as optional sounds to the natural 9 and 5. It also works as an Ab7 Mixolydian scale with a b5 and an added b9. Also here, the scale contains different sounds that normally do not coexist in the same scale but are often played on the same chord as guiding tones by accompanists.

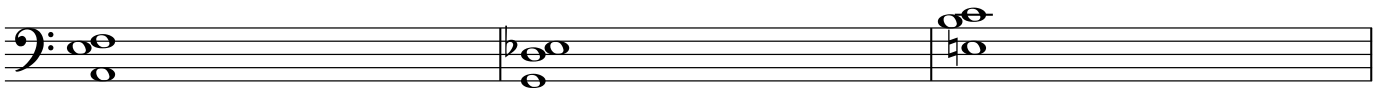
Mode 3.

Em(maj7) + F#(add2) Scale

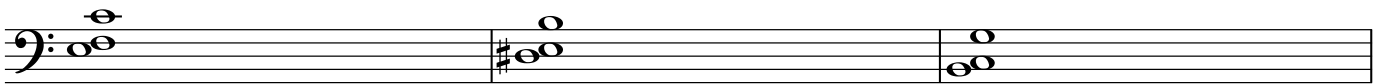
This scale can be seen as E Lydian plus the note G, or as the 5th mode of the harmonic minor scale with an added F# in this case. Either way it works on an E major7 #11 chord with an optional #9 or on an F#7 with an optional b9 sound. Generally, if you play both the flat and the natural 9 at the same time, for me the dissonance dominates how we perceive the chord. So I would perceive the chord as a F#7sus9 rather than a F#9 sound.

Let's look for intervallic structures we can play in our left hand for comping while soloing over the modes.
 I am looking for a three-tone structure composed of a fifth and a semi tone. Since some of the modes are very rich in semitones I assume we can find many of these structures. The structure gives a richness of sound and at the same time leaves space for coloration. Try improvising over the chords with the correlating mode.

Mode 1.



Lets lets reverse the order of the intervalls now



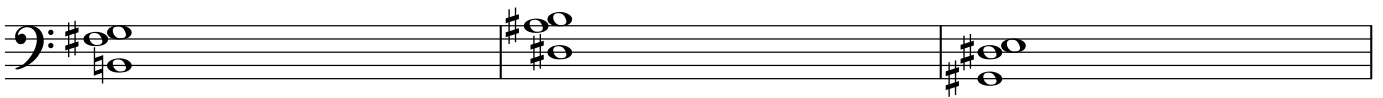
Mode 2.



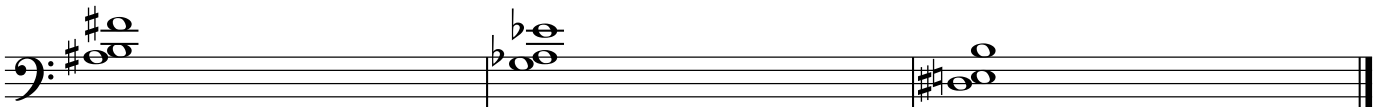
and reverse...



Mode 3.



and reverse...



etc.

etc.

play as written

First system of musical notation. The treble clef staff features a melodic line with a sharp key signature and a slur over the first two measures. The bass clef staff provides a harmonic accompaniment with a similar key signature.

Second system of musical notation. The treble clef staff continues the melodic line with a slur over the first two measures. The bass clef staff continues the harmonic accompaniment.

Third system of musical notation. The treble clef staff continues the melodic line with a slur over the first two measures. The bass clef staff continues the harmonic accompaniment.

Fourth system of musical notation. The treble clef staff features a melodic line with a flat key signature. The bass clef staff provides a harmonic accompaniment with a similar key signature.

Fifth system of musical notation. The treble clef staff features a melodic line with a sharp key signature. The bass clef staff provides a harmonic accompaniment with a similar key signature. The system concludes with a double bar line.

Modifying a Line

1. I wanted to create a loop of a line that expands in range and then shrinks, thus creating the impression of a pulse. So I took the top voices of this sequence of chords...

Dm⁷ F#(add2) Em(maj7)

The first exercise shows three chords: Dm⁷, F#(add2), and Em(maj7). The top voice of each chord is written on a single staff, showing a sequence of notes that expand in range and then contract.

The second exercise shows a single staff with a sequence of notes that expand in range and then contract, creating a pulse-like effect.

2. ...and changed the octaves of the row, increasing and then decreasing again the intervals each round. This is a fun line! Play around with this line, changing the rhythm and experiment blending over notes to create harmonies.

The third exercise shows a piano arrangement with a treble and bass clef. The treble clef has a sequence of notes that expand and contract, while the bass clef has a simple accompaniment.

The fourth exercise shows a piano arrangement with a treble and bass clef. The treble clef has a sequence of notes that expand and contract, while the bass clef has a simple accompaniment.

The fifth exercise shows a piano arrangement with a treble and bass clef. The treble clef has a sequence of notes that expand and contract, while the bass clef has a simple accompaniment.

The sixth exercise shows a piano arrangement with a treble and bass clef. The treble clef has a sequence of notes that expand and contract, while the bass clef has a simple accompaniment.

Circlic Motion

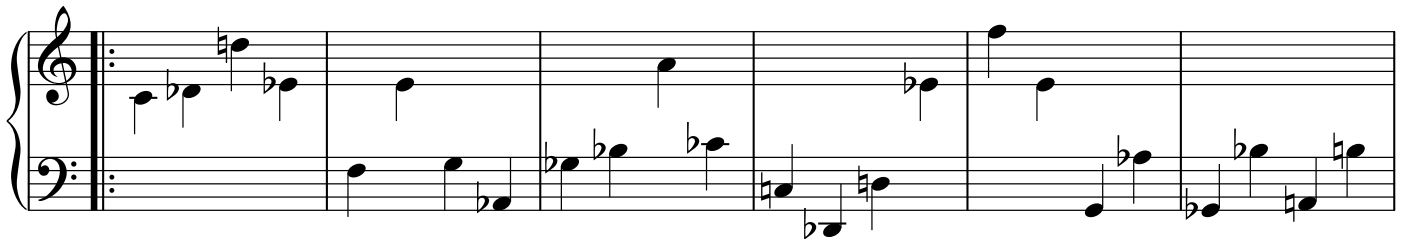
3. I asked myself, how can I create the impression of a circle with this line? To create the illusion of a circle let's look at a circle and analyse it. You can draw it on a paper to better understand what parameters we can use to translate its geometry into music. Since in music we are subordinated to time, we can not have a static circle standing in the air, (although if we could see soundwaves, one tone in space might look exactly like an expanding circle) so we have to describe a circle like a point that travels around a circle. This will look like a wave indeed. Let's look at our drawing of a circle and draw two axes through its center so that it is divided into 4 equal parts. Let's say our horizontal axis represents time and our vertical axis represents pitch. Now we could say that in our first quarter our line will go up in pitches and in the next quarter the line is going down like it came up. So we reverse it. The third quarter is going down in pitch but going backwards in time. Geometrically seen it is a reversed and mirrored version of the second quarter. Mirroring means that we play the same intervals but in the opposite direction. Reversing means playing the same line backwards. The fourth is a reversed version of the third. Here is an example with an easier line. Notice that we can simplify and say that 3 and 4 are just 1 and two mirrored.



4. Now we apply this to our 12tone line from 2. This is the reversed line:



5. This is the reversed and mirrored line.



6. And This is the mirrored line. Play all four lines is a row. Play around with rhythm and the overlapping notes to create harmonic impressions.

The first system of notation shows a sequence of notes in the bass clef: G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5. These notes are mirrored in the treble clef: G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6, D6, E6, F6, G6, A6, B6, C7. The second system continues this mirrored sequence, with some notes in the treble clef appearing to be transposed or mirrored from the bass clef line.

6. Just for fun I was curious how the line would sound with polyphony. Here I mirrored the line and transposed it a minor third down to play it along the original line. Notice that due to the big jumps the right hand plays parts of the below line and vice versa, creating different melodies and tone repetitions. It's definitely weird.

The first system of notation shows a sequence of notes in the bass clef: G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5. These notes are mirrored in the treble clef: G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6, D6, E6, F6, G6, A6, B6, C7. The second system continues this mirrored sequence, with some notes in the treble clef appearing to be transposed or mirrored from the bass clef line.

Working on a 12 Tone Line

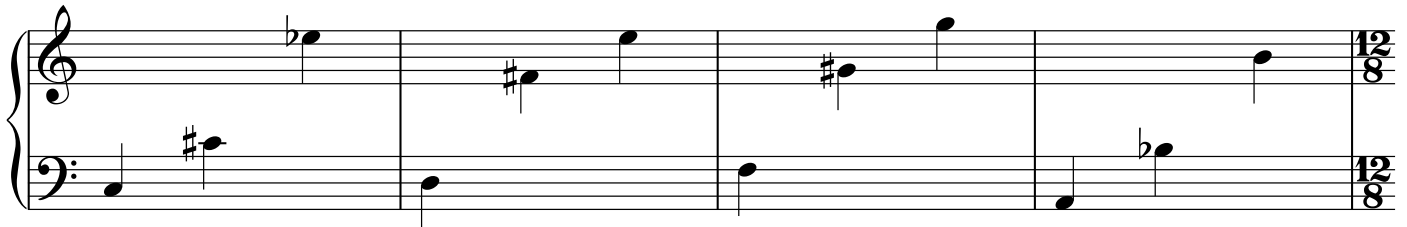
1. How can we create intervallic variation with a 12 tone line? Let's take the line from the chapter before to demonstrate some ideas.



2. We can invert the intervals: This means changing the octaves. We can make smaller units of the line by dividing it into groups. In this example I picked groups of three notes. We can choose a direction- I choose a downwards motion.

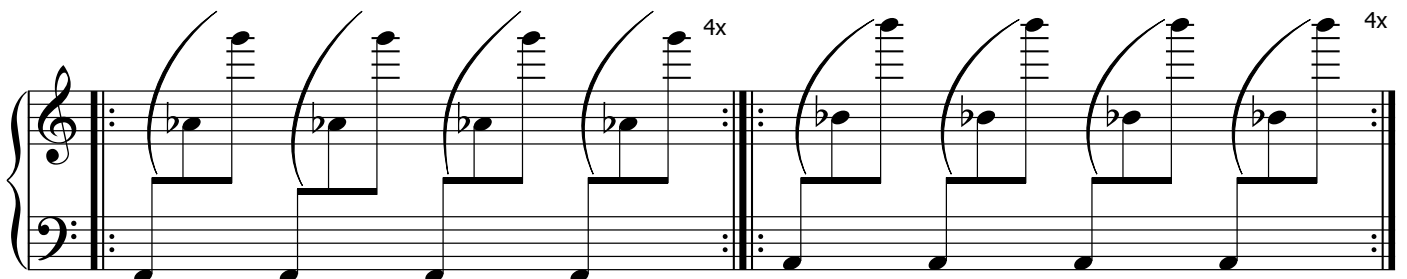
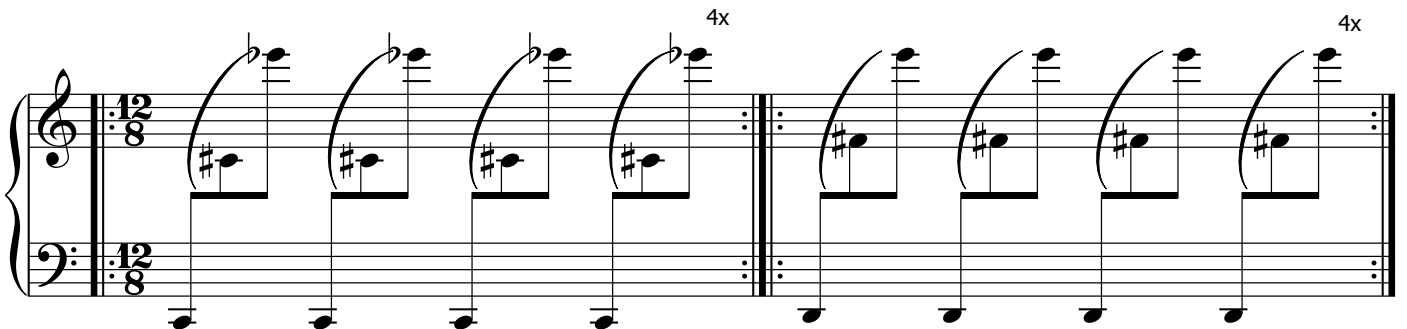


3. This is an upwards motion.



Exercises

4. Let's make the distances even bigger. This is an upwards motion with one octave added. Play the last two notes with the right hand and try to catch the last note out of a snapping movement. It's a great exercise and also a good accompaniment for a melody that's played on top of it. Play with articulation, use the pedal or play staccato, use it as a meditation. Repeat each bar 4 times.



5. Play it downwards too. This time play the two last notes with the left hand and snap the last note out of a wrist movement as if you were to throw something away, that way you can skip the big distances fast.

Musical notation for exercise 5, first system. It shows two staves (treble and bass clef) with a sequence of notes. The first four notes are marked '4x'. The second four notes are also marked '4x'.

Musical notation for exercise 5, second system. It shows two staves (treble and bass clef) with a sequence of notes. The first four notes are marked '4x'. The second four notes are also marked '4x'. The system ends with a double bar line and a 4/4 time signature.

6. Drill: Memorize the row so well, that you can assign random octaves and rhythm to each note. Here is a piece I wrote with this approach. Notice that I added a vamp in 5/4 after the theme to create some variation. The chords of the vamp are derived from the line in the same way as in example nr.2

KUMARE'S DRILL

Musical notation for 'KUMARE'S DRILL', first system. It shows two staves (treble and bass clef) in 4/4 time. The melody starts with a sharp sign on the treble staff.

Musical notation for 'KUMARE'S DRILL', second system. It shows two staves (treble and bass clef) in 4/4 time.

Musical notation for 'KUMARE'S DRILL', third system. It shows two staves (treble and bass clef) in 5/4 time, indicated by a '5/4' time signature.

A "Scaleish" Approach

7. We have explored ripping apart the intervals of our 12 tone row, now let's take a more "scaleish approach" and treat the whole row as a scale.

I call this one "The Mode Exercise" because it goes through the line like we do with modes in a diatonic scale. Always starting at the next step of the row. I always marked the notes after which we drop back to the next mode. This exercise is easy to mess up. If you feel comfortable with it try playing it with both of the hands and then start the left hand one 8th note later to create a canon. Also try to start playing the left hand two or three, or more eight notes later. This is quite challenging.

8. Here is an exercise playing always three notes in a row then jumping back to the next step. Actually, any scale exercise you know and are used to play on a major scale works for this one too (playing different intervals in different groupings), only it gets weirder and more interesting with the 12 tone line. Try to play this one fast. It's a real tongue twister.



10. Now let's add some polyphony and start the left hand on the note F (six blocks later). Also repeat each bar at first and then go on to play the full line without repeats. This is a canon.

The first system of musical notation consists of two staves, Treble and Bass. The time signature is 6/8. The key signature has one sharp (F#). The Treble staff begins with a treble clef and a key signature of one sharp. The Bass staff begins with a bass clef and a key signature of one sharp. The music is divided into four measures by repeat signs. The first measure of the Treble staff contains the notes G4, A4, B4, C5, B4, A4, G4. The first measure of the Bass staff contains the notes F3, G3, A3, B3, C4, B3, A3. The second measure of the Treble staff contains the notes A4, B4, C5, B4, A4, G4. The second measure of the Bass staff contains the notes G3, A3, B3, C4, B3, A3. The third measure of the Treble staff contains the notes B4, C5, B4, A4, G4, F#4. The third measure of the Bass staff contains the notes A3, B3, C4, B3, A3, G3. The fourth measure of the Treble staff contains the notes C5, B4, A4, G4, F#4, E4. The fourth measure of the Bass staff contains the notes B3, C4, B3, A3, G3, F#3.

The second system of musical notation consists of two staves, Treble and Bass. The time signature is 6/8. The key signature has one sharp (F#). The Treble staff begins with a treble clef and a key signature of one sharp. The Bass staff begins with a bass clef and a key signature of one sharp. The music is divided into four measures by repeat signs. The first measure of the Treble staff contains the notes A4, B4, C5, B4, A4, G4. The first measure of the Bass staff contains the notes G3, A3, B3, C4, B3, A3. The second measure of the Treble staff contains the notes B4, C5, B4, A4, G4, F#4. The second measure of the Bass staff contains the notes A3, B3, C4, B3, A3, G3. The third measure of the Treble staff contains the notes C5, B4, A4, G4, F#4, E4. The third measure of the Bass staff contains the notes B3, C4, B3, A3, G3, F#3. The fourth measure of the Treble staff contains the notes D5, C5, B4, A4, G4, F#4. The fourth measure of the Bass staff contains the notes C4, B3, A3, G3, F#3, E3.

The third system of musical notation consists of two staves, Treble and Bass. The time signature is 6/8. The key signature has one sharp (F#). The Treble staff begins with a treble clef and a key signature of one sharp. The Bass staff begins with a bass clef and a key signature of one sharp. The music is divided into four measures by repeat signs. The first measure of the Treble staff contains the notes E4, F#4, G4, A4, B4, C5. The first measure of the Bass staff contains the notes D3, E3, F#3, G3, A3, B3. The second measure of the Treble staff contains the notes F#4, G4, A4, B4, C5, B4. The second measure of the Bass staff contains the notes E3, F#3, G3, A3, B3, C4. The third measure of the Treble staff contains the notes G4, A4, B4, C5, B4, A4. The third measure of the Bass staff contains the notes F#3, G3, A3, B3, C4, B3. The fourth measure of the Treble staff contains the notes A4, B4, C5, B4, A4, G4. The fourth measure of the Bass staff contains the notes G3, A3, B3, C4, B3, A3.

Interval Loops

all-interval-rows

1. My idea was to create an impression of expansion and compression to mimic the movement of a pulse. So I came up with this ruleset: We move up 3 steps and then down 3 step. Each time we change the direction we decrease the interval by a halfstep. Once our interval cannot be reduced we enlarge it by a halfstep. We start with a major 7th. Play it with two hands, play always two notes in each hand.

The first exercise is written in bass clef with a 3/4 time signature. It consists of three staves of music. The first staff begins with a double bar line and a repeat sign. The notes are: G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6, D6, E6, F6, G6, A6, B6, C7, D7, E7, F7, G7, A7, B7, C8, D8, E8, F8, G8, A8, B8, C9, D9, E9, F9, G9, A9, B9, C10, D10, E10, F10, G10, A10, B10, C11, D11, E11, F11, G11, A11, B11, C12, D12, E12, F12, G12, A12, B12, C13, D13, E13, F13, G13, A13, B13, C14, D14, E14, F14, G14, A14, B14, C15, D15, E15, F15, G15, A15, B15, C16, D16, E16, F16, G16, A16, B16, C17, D17, E17, F17, G17, A17, B17, C18, D18, E18, F18, G18, A18, B18, C19, D19, E19, F19, G19, A19, B19, C20, D20, E20, F20, G20, A20, B20, C21, D21, E21, F21, G21, A21, B21, C22, D22, E22, F22, G22, A22, B22, C23, D23, E23, F23, G23, A23, B23, C24, D24, E24, F24, G24, A24, B24, C25, D25, E25, F25, G25, A25, B25, C26, D26, E26, F26, G26, A26, B26, C27, D27, E27, F27, G27, A27, B27, C28, D28, E28, F28, G28, A28, B28, C29, D29, E29, F29, G29, A29, B29, C30, D30, E30, F30, G30, A30, B30, C31, D31, E31, F31, G31, A31, B31, C32, D32, E32, F32, G32, A32, B32, C33, D33, E33, F33, G33, A33, B33, C34, D34, E34, F34, G34, A34, B34, C35, D35, E35, F35, G35, A35, B35, C36, D36, E36, F36, G36, A36, B36, C37, D37, E37, F37, G37, A37, B37, C38, D38, E38, F38, G38, A38, B38, C39, D39, E39, F39, G39, A39, B39, C40, D40, E40, F40, G40, A40, B40, C41, D41, E41, F41, G41, A41, B41, C42, D42, E42, F42, G42, A42, B42, C43, D43, E43, F43, G43, A43, B43, C44, D44, E44, F44, G44, A44, B44, C45, D45, E45, F45, G45, A45, B45, C46, D46, E46, F46, G46, A46, B46, C47, D47, E47, F47, G47, A47, B47, C48, D48, E48, F48, G48, A48, B48, C49, D49, E49, F49, G49, A49, B49, C50, D50, E50, F50, G50, A50, B50, C51, D51, E51, F51, G51, A51, B51, C52, D52, E52, F52, G52, A52, B52, C53, D53, E53, F53, G53, A53, B53, C54, D54, E54, F54, G54, A54, B54, C55, D55, E55, F55, G55, A55, B55, C56, D56, E56, F56, G56, A56, B56, C57, D57, E57, F57, G57, A57, B57, C58, D58, E58, F58, G58, A58, B58, C59, D59, E59, F59, G59, A59, B59, C60, D60, E60, F60, G60, 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G304, A304, B304, C305, D305, E305, F305, G305, A305, B305, C306, D306, E306, F306, G306, A306, B306, C307, D307, E307, F307, G307, A307, B307, C308, D308, E308, F308, G308, A308, B308, C309, D309, E309, F309, G309, A309, B309, C310, D310, E310, F310, G310, A310, B310, C311, D311, E311, F311, G311, A311, B311, C312, D312, E312, F312, G312, A312, B312, C313, D313, E313, F313, G313, A313, B313, C314, D314, E314, F314, G314, A314, B314, C315, D315, E315, F315, G315, A315, B315, C316, D316, E316, F316, G316, A316, B316, C317, D317, E317, F317, G317, A317, B317, C318, D318, E318, F318, G318, A318, B318, C319, D319, E319, F319, G319, A319, B319, C320, D320, E320, F320, G320, A320, B320, C321, D321, E321, F321, G321, A321, B321, C322, D322, E322, F322, G322, A322, B322, C323, D323, E323, F323, G323, A323, B323, C324, D324, E324, F324, G324, A324, B324, C325, D325, E325, F325, G325, A325, B325, C326, D326, E326, F326, G326, A326, B326, C327, D327, E327, F327, G327, A327, B327, C328, D328, E328, F328, G328, A328, B328, C329, D329, E329, F329, G329, A329, B329, C330, D330, E330, F330, G330, A330, B330, C331, D331, E331, F331, G331, A331, B331, C332, D332, E332, F332, G332, A332, B332, C333, D333, E333, F333, G333, A333, B333, C334, D334, E334, F334, G334, A334, B334, C335, D335, E335, F335, G335, A335, B335, C336, D336, E336, F336, G336, A336, B336, C337, D337, E337, F337, G337, A337, B337, C338, D338, E338, F338, G338, A338, B338, C339, D339, E339, F339, G339, A339, B339, C340, D340, E340, F340, G340, A340, B340, C341, D341, E341, F341, G341, A341, B341, C342, D342, E342, F342, G342, A342, B342, C343, D343, E343, F343, G343, A343, B343, C344, D344, E344, F344, G344, A344, B344, C345, D345, E345, F345, G345, A345, B345, C346, D346, E346, F346, G346, A346, B346, C347, D347, E347, F347, G347, A347, B347, C348, D348, E348, F348, G348, A348, B348, C349, D349, E349, F349, G349, A349, B349, C350, D350, E350, F350, G350, A350, B350, C351, D351, E351, F351, G351, A351, B351, C352, D352, E352, F352, G352, A352, B352, C353, D353, E353, F353, G353, A353, B353, C354, D354, E354, F354, G354, A354, B354, C355, D355, E355, F355, G355, A355, B355, C356, D356, E356, F356, G356, A356, B356, C357, D357, E357, F357, G357, A357, B357, C358, D358, E358, F358, G358, A358, B358, C359, D359, E359, F359, G359, A359, B359, C360, D360, E360, F360, G360, A360, B360, C361, D361, E361, F361, G361, A361, B361, C362, D362, E362, F362, G362, A362, B362, C363, D363, E363, F363, G363, A363, B363, C364, D364, E364, F364, G364, A364, B364, C365, D365, E365, F365, G365, A365, B365, C366, D366, E366, F366, G366, A366, B366, C367, D367, E367, F367, G367, A367, B367, C368, D368, E368, F368, G3

3. Let's now play the halfsteps on the top and bottom in the direction they are coming from. This creates a more interesting harmonic movement. Notice that this row modulates by wholesteps, which means that it will arrive at the beginning of it's cycle, one wholetone higher than it started.

The first system of musical notation shows a piano introduction. The right hand (treble clef) plays a sequence of notes: C4, D4, E4, F4, G4, A4, B4, C5. The left hand (bass clef) plays a sequence of notes: C3, D3, E3, F3, G3, A3, B3, C4. The notes are connected by half-step intervals.

The second system continues the half-step movements. The right hand plays: C5, B4, A4, G4, F4, E4, D4, C4. The left hand plays: C4, B3, A3, G3, F3, E3, D3, C3. The notes are connected by half-step intervals.

The third system shows a more complex half-step sequence. The right hand plays: C4, D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The left hand plays: C3, D3, E3, F3, G3, A3, B3, C4, B3, A3, G3, F3, E3, D3, C3. The notes are connected by half-step intervals.

The fourth system continues the half-step movements. The right hand plays: C4, D4, E4, F4, G4, A4, B4, C5. The left hand plays: C3, D3, E3, F3, G3, A3, B3, C4. The notes are connected by half-step intervals.

The fifth system ends with a whole note in the right hand and a whole note in the left hand. The right hand plays: C4. The left hand plays: C3. The text "etc." is written above the right hand staff.

4. Here is an all-interval-arpeggio. It is a line that goes upwards, reducing the interval by a halfstep, each step. Notice how tonal it sounds in the beginning. If we were to attribute a chord symbol to it, it would be the one of CMaj7#11. In the later phase we can see it drift into the realm of AbMaj7 which is a mediant(third related) of C.

The musical notation for exercise 4 shows an all-interval arpeggio. The right hand (treble clef) plays a sequence of notes: C4, D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The left hand (bass clef) plays a sequence of notes: C3, D3, E3, F3, G3, A3, B3, C4, B3, A3, G3, F3, E3, D3, C3. A dashed line labeled "8va" indicates an octave shift in the right hand.

5. Now, let's take it down from here by again starting with the interval of a major seventh. It starts off with a A-7,13 rendering and then transitions into Eb-7 before dropping back to C. It makes a cute little loop when combining it with the ascending arpeggio from example 4. (make sure to leave away the tone repetitions though).

Musical notation for example 5. The right hand starts with an ascending arpeggio (A, C#, E, G) and then continues with a descending line. The left hand plays a descending line. A dashed line labeled "8va" indicates an octave shift in the right hand.

6. Here is the same line with the only difference, that I now included the intervals of the octave and the prima. It now covers the full range of the piano and has an almost groovy feel to it that comes from the tone repetitions, which in this case are caused by the prima and the octave.

Musical notation for example 6. The right hand starts with an ascending arpeggio (A, C#, E, G) and then continues with a descending line. The left hand plays a descending line. A dashed line labeled "8va" indicates an octave shift in the right hand. The piece ends with a double bar line and a repeat sign.

7. Now we can add another element we used before: The change in direction. Let's change the direction after three steps. We will, for this example, not include the octave and the prima. Notice that since the number of steps(6) don't match the number of intervals(11) in this cycle we will go on a long trip with this one(6x11) until the cycle repeats. Play two notes in each hand always. It's funny, although the line seems to meander downwards, in the end, the new cycle starts one octave higher than it's origin.

Musical notation for example 7. The right hand plays a complex melodic line with changes in direction. The left hand plays a descending line. The piece ends with a double bar line and a repeat sign.

This is where the new cycle begins one octave higher than it started

8. Now we can play the groups of four notes that naturally fall in our fingers(when we play two notes per hand), at once and see how they sound as chords and what harmonies they make.

9. Notice that in the previous example, one of the the outer voices always repeats. This lead me to the idea to, rather than jumping from the top to the bottom voice, try playing the intervallic structures always from one fixed starting point, thus creating a tonal reference point. We will at first start with the bottom note as a fixed note and build our all-interval-sequence on top of it.

10. Now we do the same thing but with the top voice as a fixed point, adding the intervals downwards in the same sequence: Decreasing the intervals from a major seventh to a minor second, and so on. It will give us a mirrored version (negative, as some say) of example 9.

There are so many more possibilities to explore here. Changing the parameters we are working with will give us a tremendous amount of variations. Here are a few I can think of:

-We can change the number of steps.

-We can modify the intervallic sequence by, for example, playing the intervals in an ascending row (from small to big) or by adding both.

-We can make blocks of four or three or five from the all-interval-arpeggio as in example 4. and play them in the range of three octaves.

-We can apply the techniques of mirroring and reversing a line, that we have talked about in the previous chapter called Circlic Motion.