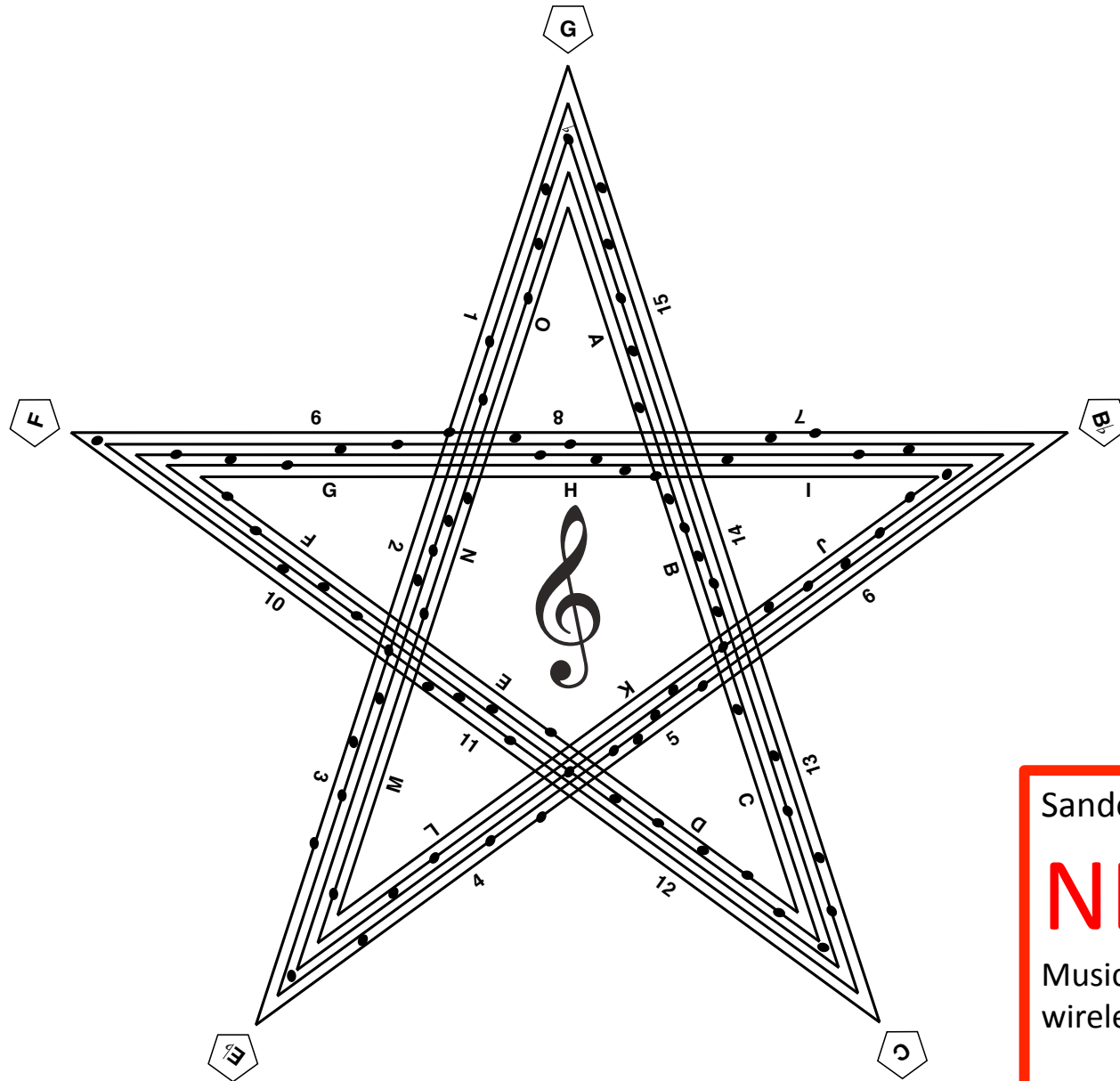Sandeep Bhagwati NEXUS

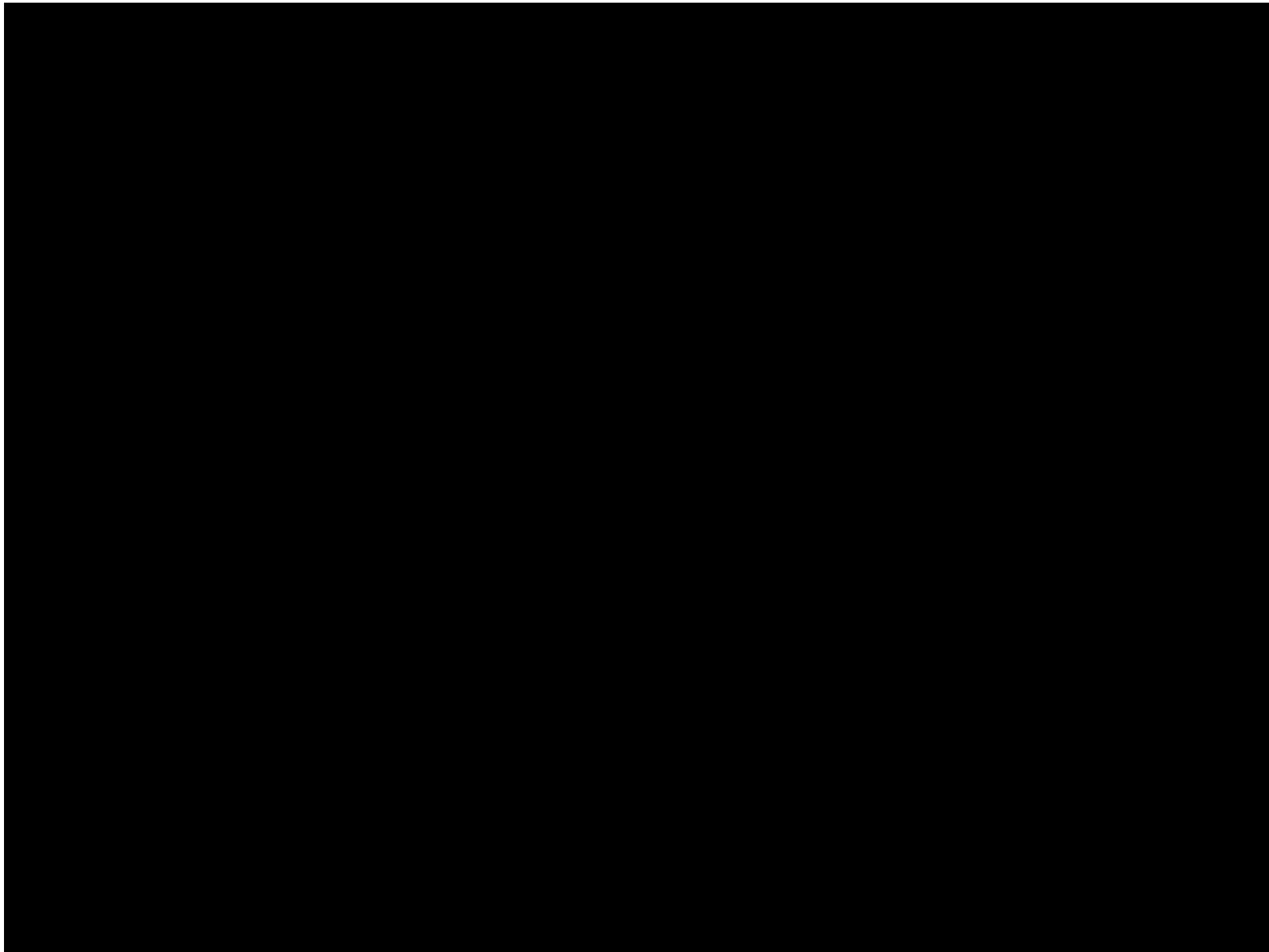Music for 5 players in a wireless network

DRHA 2010 London

Sandeep Bhagwati

NEXUS

Music for 5 players in a wireless network

Score for the Melos

….people pursue their own, uncoordinated pathways of movement, against the backdrop of unwavering wireless networks…

…communicational universes…talking to each other, their geometries of distance and interconnection made and remade in ongoing fashion…

Will Straw, The Circulatory Turn
in: "the wireless spectrum"
ed. B.Crow, M.Longford, K.Sawchuck,
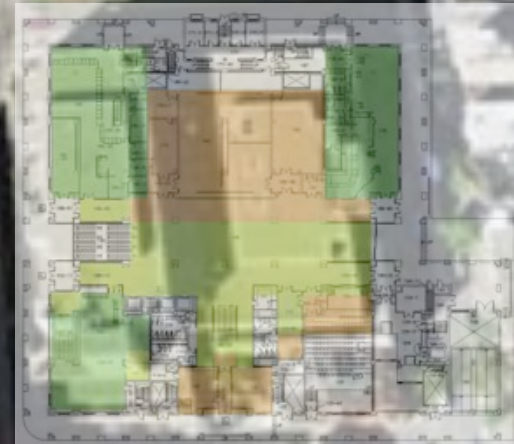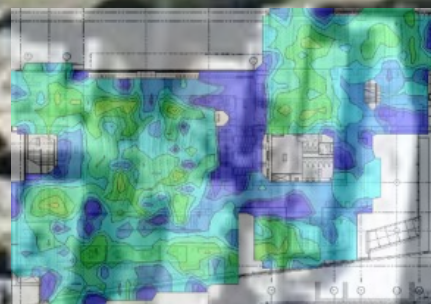*University of Toronto Press, 2010, p.17/25*

Concordia Downtown Campus

Concordia Downtown Campus Wireless Heat Maps

wireless

movement

signal

drop -out

path

encounter

nexus

loop

topology

speed

topography

people

between
stable & variable
field & agency
send &receive
intent & result

NEXUS

Sandeep Bhagwati

Music for 5 players in a wireless network

Lori Freedman, Bass Clarinet

Wireless Heat Map in the EV Building

wireless	movement

signal	drop-out	path	encounter

nexus	loop	between stable & variable field & agency send &receive intent & result	topology	speed	topography	people

Concordia Downtown Campus
The Five Paths

Alto Flute
French Horn
Eb Clarinet
Trumpet
Bass Clarinet

Sandeep Bhagwati NEXUS

Music for 5 players in a wireless network

Lorie Freedman, Bass Clarinet

wireless	movement
signal · *drop-out*	path · *encounter*

nexus · *loop*

between
stable & variable
field & agency
send & receive
intent & result

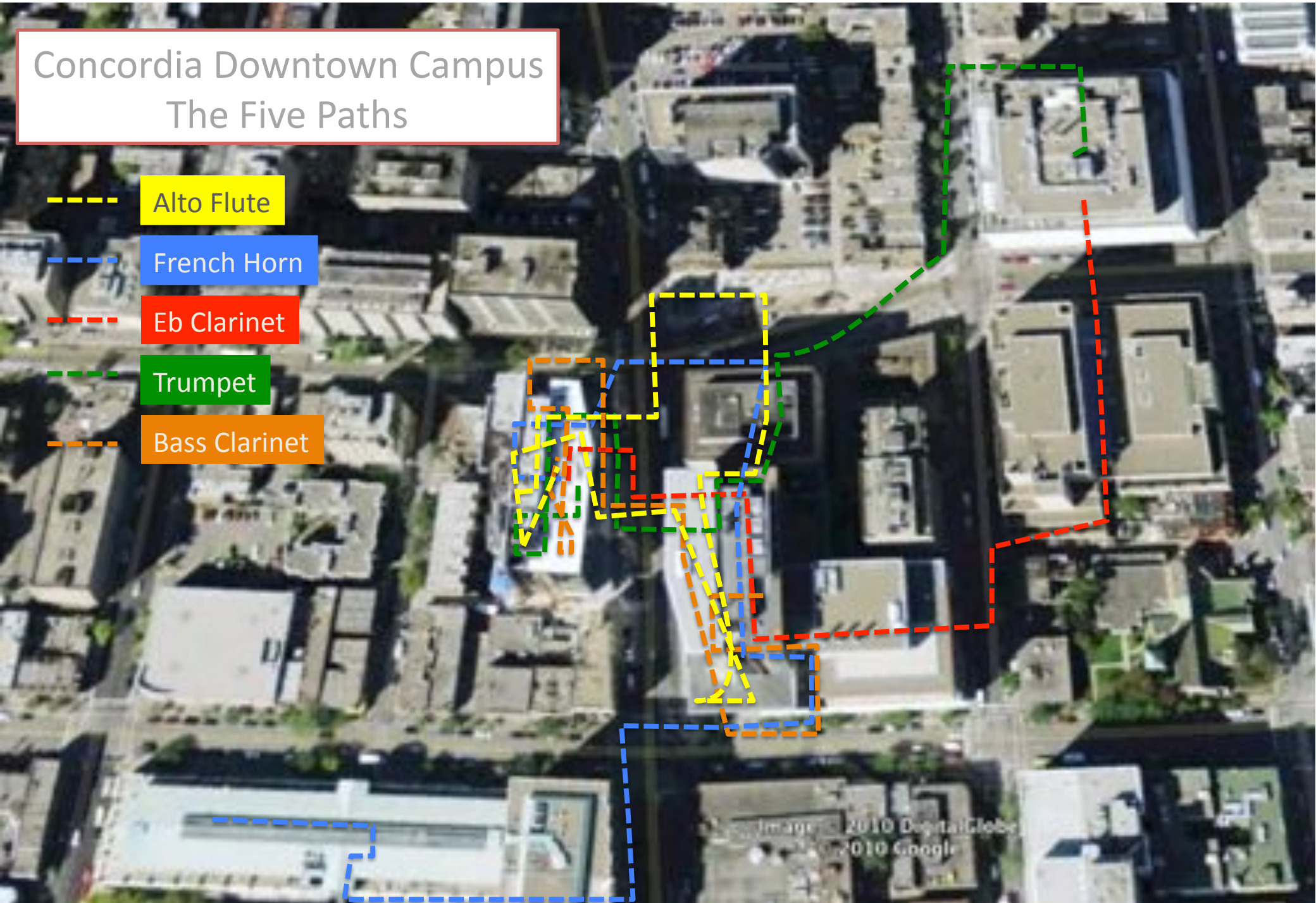topology · *speed* · topography · *people*

comprovisation

creation in time-based arts
predicated on
an aesthetically relevant
interlocking of
context-independent
and
contingent performance elements

comprovisation

context-independent = SCORE

any instruction or device or rule etc.

that stabilizes

a number of aspects of a performance

from one realization to another

contingent = *PERFORMANCE*

any action within a performative context

that is not covered by the score.

score

performance

pitches rhythms

phrases

to project

to connect

sequence

parsing

mode

reaction

performer

people

circulation

interpretation

comprovisation between
context-independent & contingent
stable & variable
imput & outcome
expectation & surprise

embodied

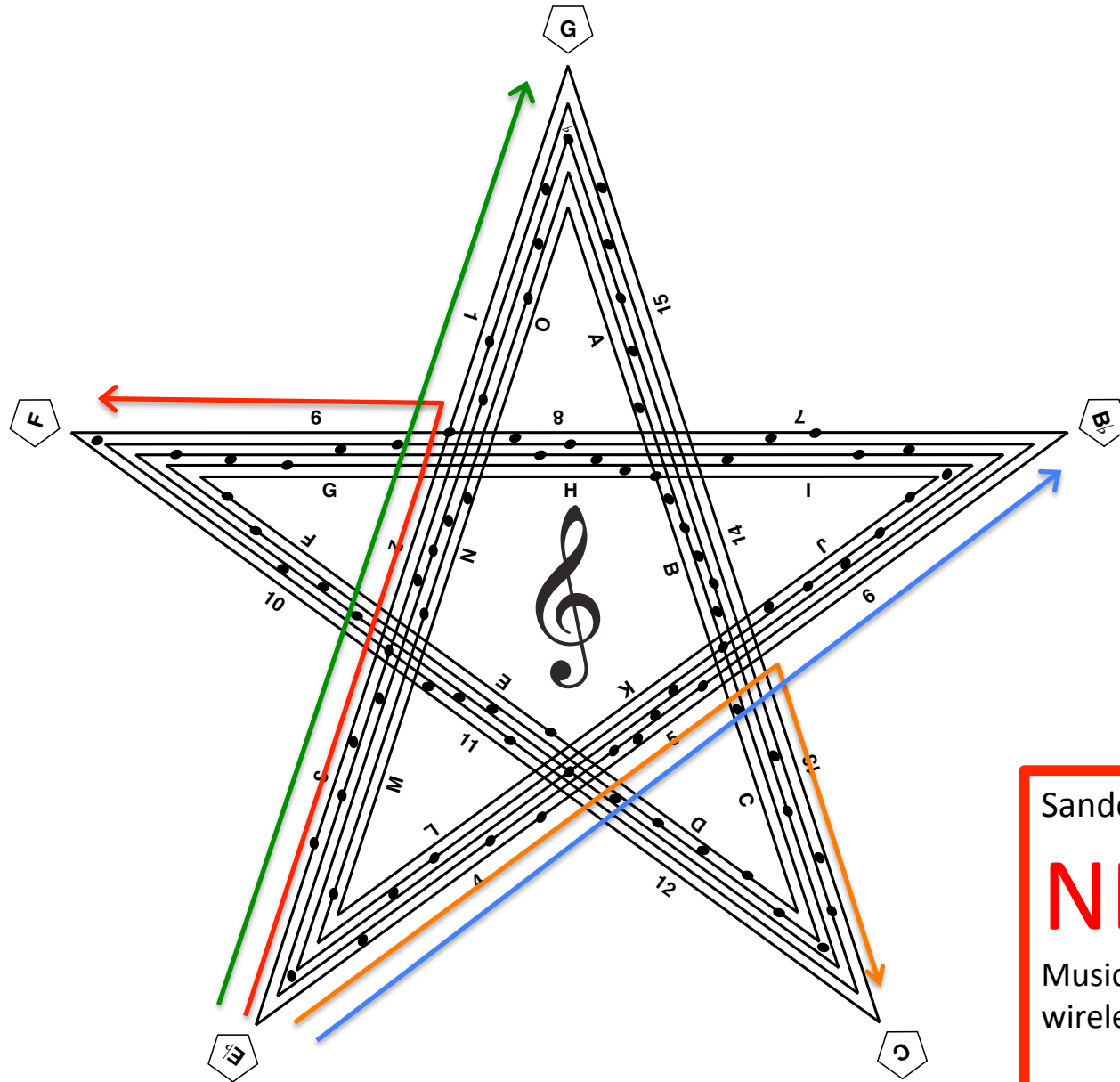*stimulus*

public

audience
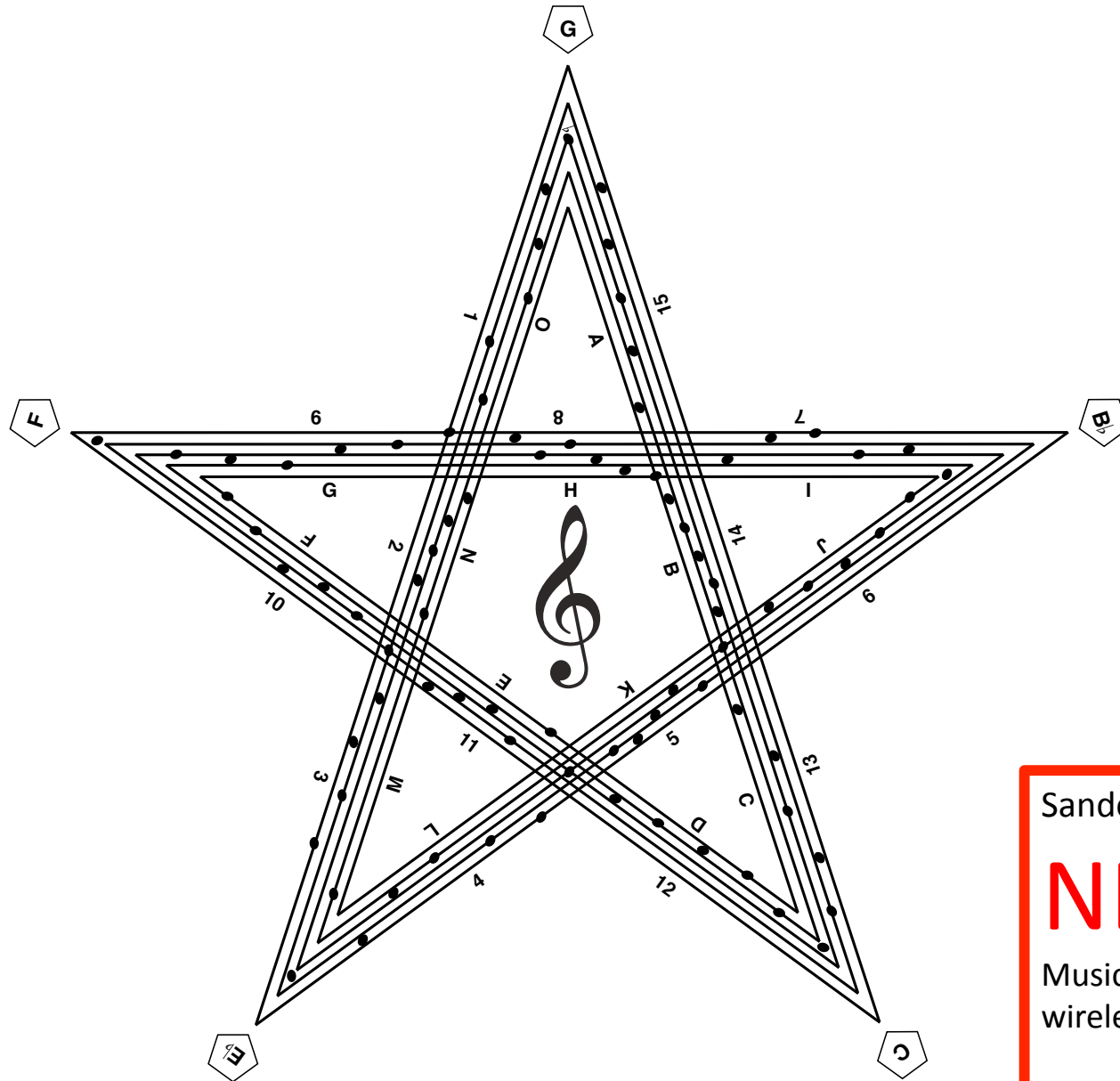
Sandeep Bhagwati

NEXUS

Music for 5 players in a wireless network

Score for the Melos

Sandeep Bhagwati

NEXUS

Music for 5 players in a wireless network

Score for the Melos

Sandeep Bhagwati

NEXUS

RHYTHMS

HOW TO PLAY

These rhythms are to
Be combined with the
pitches and noise sounds.

As with the melodies, these
rhythm models can be recombined in
any way – just follow the lines, and
decide where to go at the next crossing.

To make these rhythms easier to
remember, each straight line is a
rhythmical palindrome – i.e. it is
the same "irreversible" rhythm
forwards and backwards.
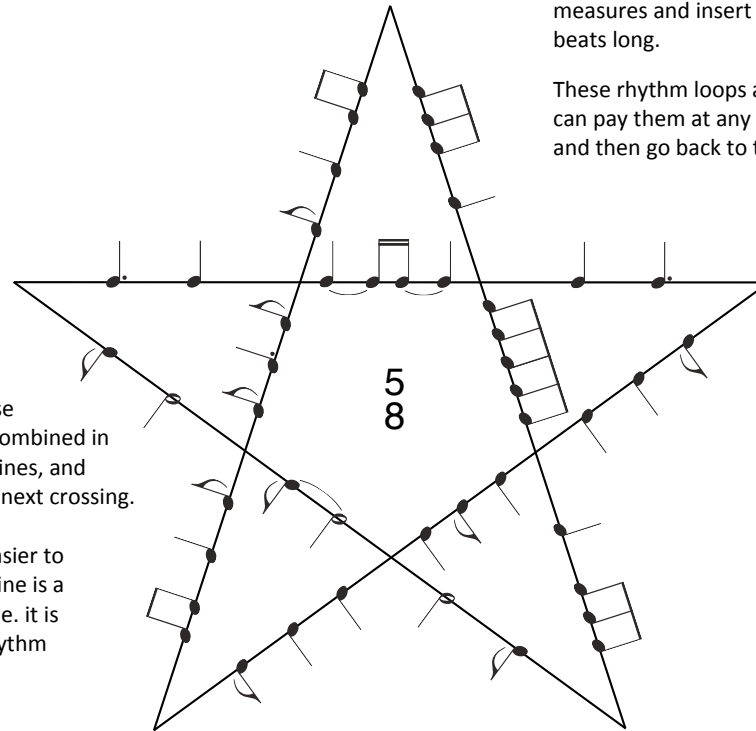
BREAK LOOPS

Sometimes you leave the confines of these 5/8
measures and insert a break rhythm loop that is 25
beats long.

These rhythm loops are shown on another page – you
can pay them at any moment in your comprovisation –
and then go back to the 5/8 rhythms on this page.

The rhythm loops (on the
other page) consist of the
actual break loop and the
break pulse.

[You can use the break
pulse to create new break
loops with the same
accent structure.]

The break pulses have a
main accent (+), a jump
phase (o) and a return
anchor (>).

These serve to properly
phrase and emphasize the
long rhythmical lines of
the break loops.

5
8

NB: You need not always play these rhythms, but you should start and end with them, and otherwise always stay in
the five beat swing. Of course, you can repeat each rhythm as often as you need before moving on to the next !

WHAT MELODIES DO I PLAY ?

If you look at the NEXUS score, you will see that each tip of the star belongs to one instrument.
Four melodies originate from each tip – these are one player's melodies. (in this case: G's).
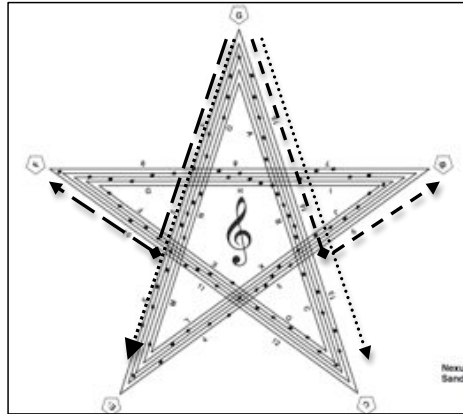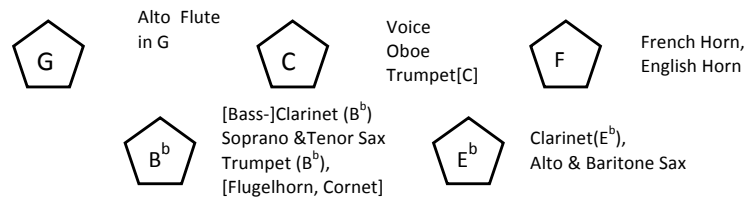

To play NEXUS, you will need to learn [by heart, forwards and backwards, and in your sleep] a minimum of four different melodies, each made up of 19 pitches (or three line segments). These are the four melodies that you will have to play– they belong only to you, even if parts of them overlap with parts of the melodies of others.

In addition you can see that there are many more possibilities of melodies within the score. These are optional: you can go in any direction, turn left or right and thus create a rich number of melodies that are all related to each other.

You can also see that, in the score, all line segments have a number on one side, and a letter on the other. The numbers indicate one way of looking at the staff, the letters indicate that one can also look at the staff from the other side: thereby playing a modal retrograde inversion of the melody.
[NEXUS uses these numbers and letters to designate paths for all melodies through the score.]
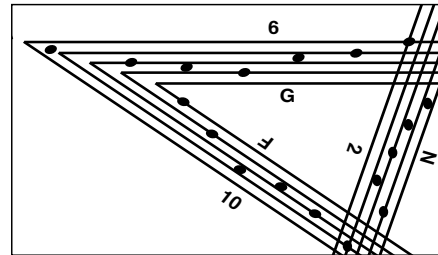
Now, if you look at the four melodies again (above), you will see that each melody leads to a different tip. That means that each of your four melodies connects you to exactly one other instrument. You see the instrument designation in the little pentagon at each tip – here is the legend.

G	Alto Flute in G
C	Voice Oboe Trumpet[C]
F	French Horn, English Horn
B^b	[Bass-]Clarinet (B^b) Soprano &Tenor Sax Trumpet (B^b), [Flugelhorn, Cornet]
E^b	Clarinet(E^b), Alto & Baritone Sax

So whenever you are "connected" to another instrument you play the melody for that instrument.

what you can read depends on the instrument you play.
old choices determine current choices
THUS
the same notation will encode widely different melodies for each player

A variety of different melodies derived from the Nexus Pentagram

NEXUS

Sandeep Bhagwati

Music for 5 players in a wireless network
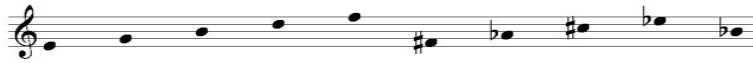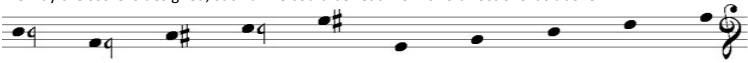
Amy Horvey, Trumpet in C

The Nexus Mode

Nexus uses a limited number of written pitches: all the pitches on the five lines of the stave, all the pitches in the interstices, with accidentals – and for one melody only, the B♭ on the center line.

The way the score is designed, such a line could be read from two directions: as above –

and like this: visually inverted and retrograde, as if looked at from the other side - or better, with the clef and the accidentals corrected:

You can see that the accidentals are always on the same interstices: One of the rules of Nexus is that these four notes remain the same, regardless from which side they are looked at: the lowest note in between the stave-lines is a F#, the next is an A♭, then again a C# and then again an E♭. So a melody like this:

Would be transformed into this when read from the other side.

This is why there are no accidentals written into the pentagram score: because they are fixed to their own interstice and never change within the piece.

So when you see a   you always play a   when you see a   you always play a   etc.

IMPORTANT: ALL THESE PITCHES ARE WRITTEN – EACH INSTRUMENT WILL TRANSPOSE THEM DIFFERENTLY !

The 5 Nexus Comprovisation Modes

The melodies in NEXUS are not literally melodies in any conventional sense. Rather, they are sequences of pitches that can be interpreted in many different ways. Each of the five comprovisation modes asks you to read and improvise on a given sequence of pitches in a different manner.

RAAG the sequence of pitches is read as a real melody to be improvised on in whatever improv style you choose. For this improvisation you can freely use all pitches of the Nexus mode, but you must always start from and return to the melody or to fragments of it. Your task as an improviser would be to make the re-appearance of the raag-melody towards the end of a phrase natural. Tempo: very slow to slow.

MAQAM you always improvise on one pitch only, exploiting microtone glissandi, rhythmic variations and colour variations. You proceed from pitch to pitch – each in turn becomes the centre of these ornamentations around one pitch. Tempo: medium to excited.

SCAT Improvise in a complex, but groovy rhythm by using intervals from the melodic sequence. At any time the improv may use only max 3 different pitches, but nothing prevents a fourth one coming in occasionally. You play each short segment for min 3 max 15 times before you move on to the next. Tempo: fast to very fast. *Example: If you have 7 notes [e.g. c#, g, f#,b,a♭,e♭,d] you will slowly work your way through this melody by playing rhythmically with [c#, g] then with [c#, g, f#] then with perhaps [f#,b] then [b,a♭,e♭} then, briefly, [b,a♭,e♭,d} and finally with [e♭,d}.*

SCRUB rapidly move back and forth between the individual pitches, always starting on the one you ended with. Short, rapid bursts followed by hectic irregularly repeated pitches or trills with varying speeds on a long held pitches. Tempo: many rapid tempo-changes

NEXUS spider-legged lines crossing several octaves, with wide jumps, moving in varying speeds, but always relatively slow, not hectic or aggressive. Rather, there should be some grandeur to the melodies. Use the pitches in sequence, and cycle through the melody without any improv on pitches – the only improv should be around the octave transposition, the durations, the timbre and the dynamics. Tempo: slowly morphing tempi

In all improvisations the rhythms used MUST be based on a palpable 5 beat cycle or a 5/x measure. You can freely use the rhythmic models suggested (see below) or come up with your own.The tempo may change, the basic units may change, but you must always feel the groove in fives !
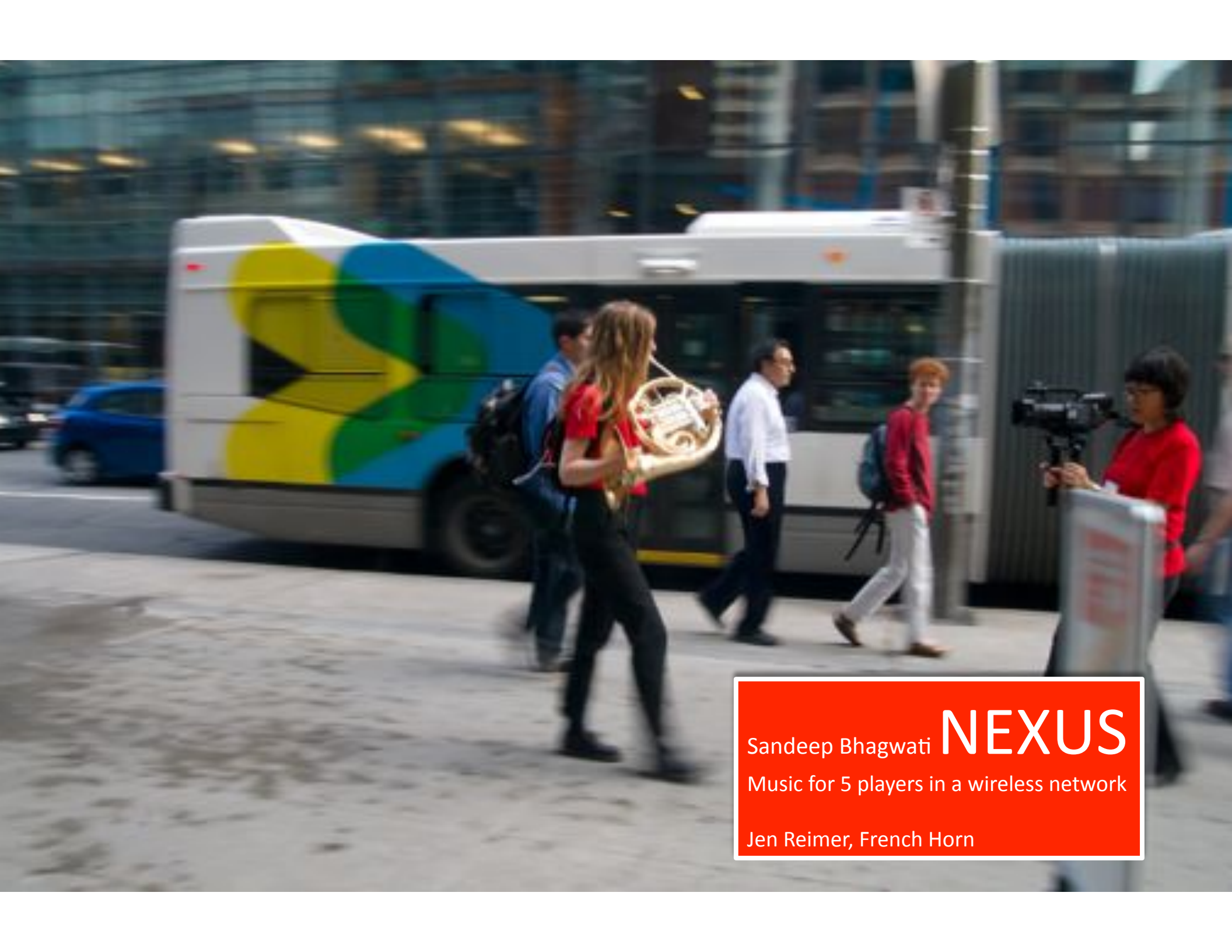
...communicational universes...talking to each other, their geometries of distance and interconnection made and remade in ongoing fashion...

Will Straw, The Circulatory Turn

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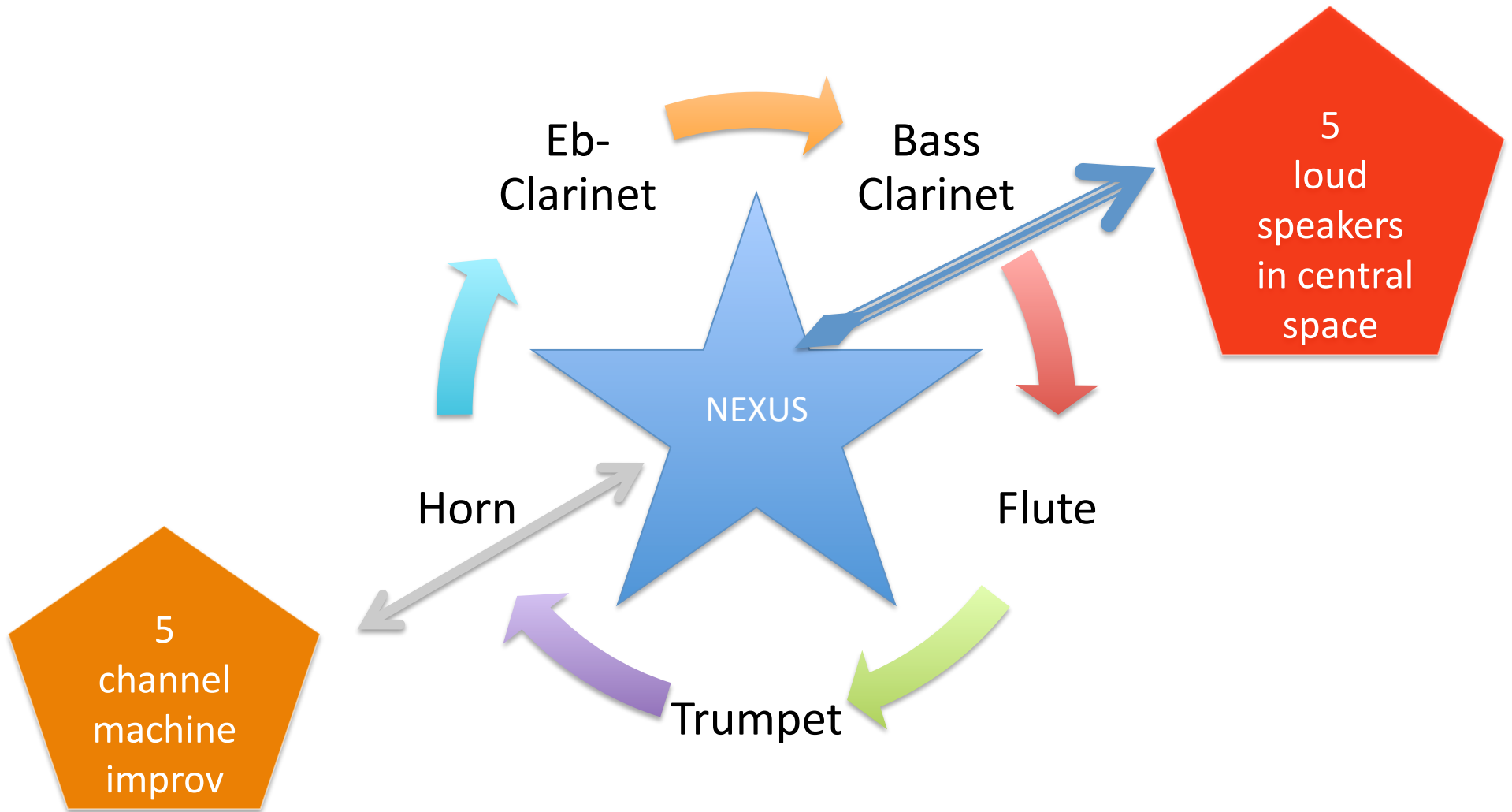
University of Toronto Press, 2010, p.25

Sandeep Bhagwati NEXUS

Music for 5 players in a wireless network

Jen Reimer, French Horn

Connections: Loops and Central Nexus
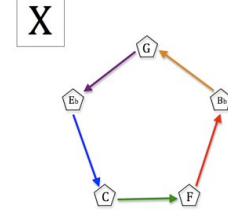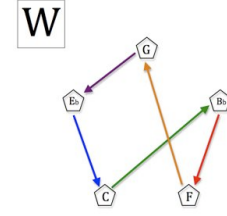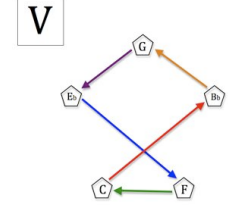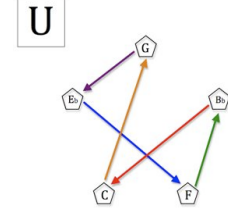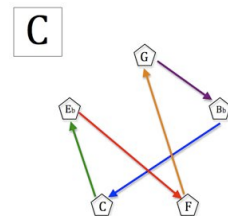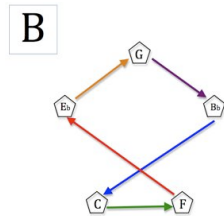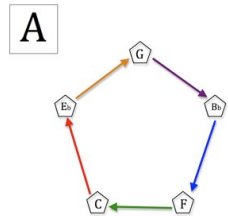
THE BOOMBOX CASCADE – MUSIC MINUS ONE[5]

Each player
hears only
one other
player

and only one
other player
will hear
her music
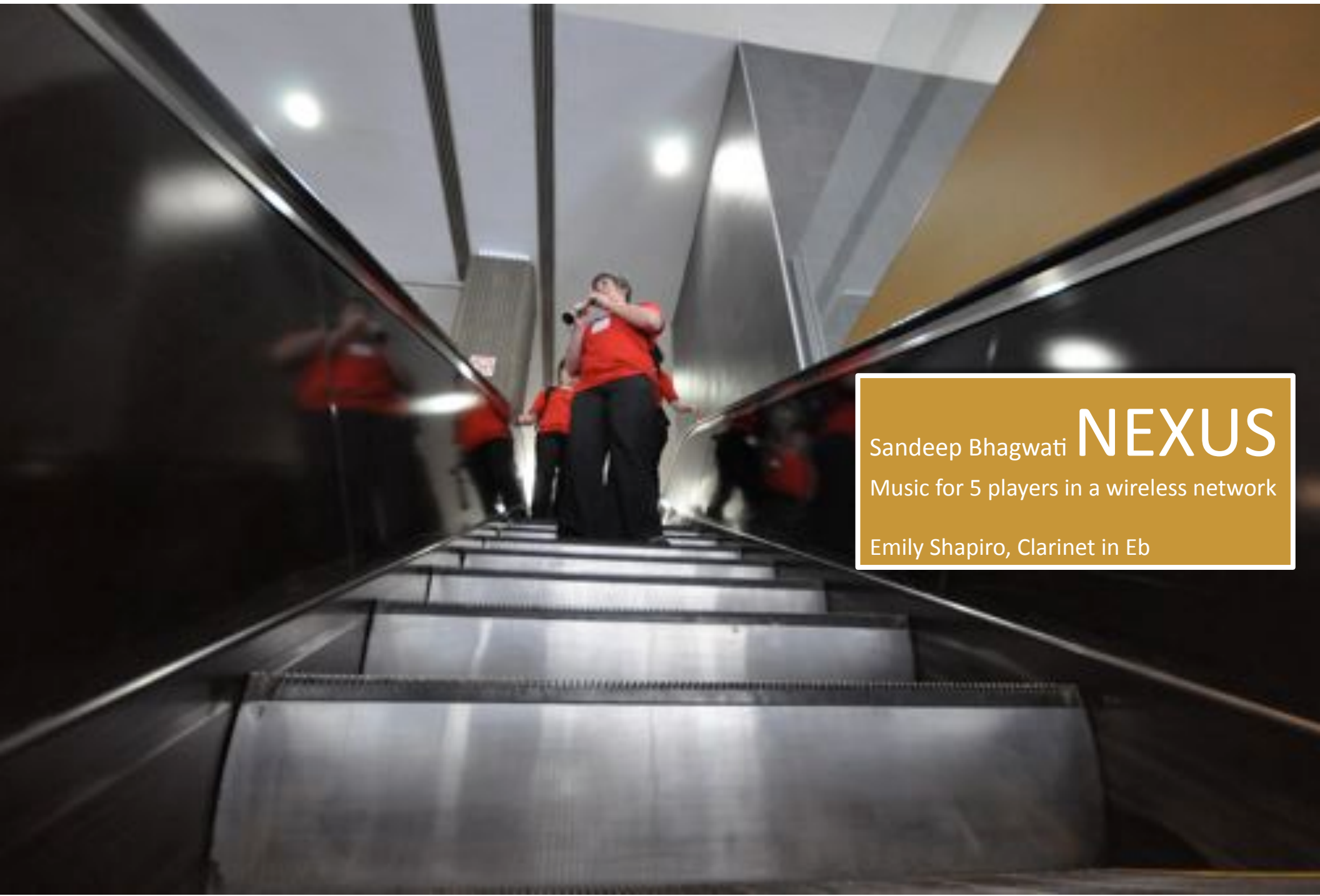
she sends and
receives quasi
anonymously

no dialogue,
no real
presence

what we hear is
neither here
nor there
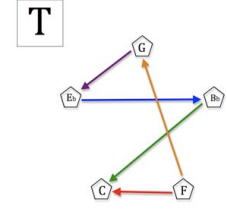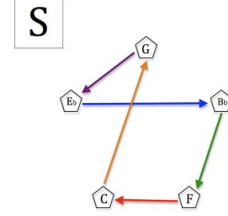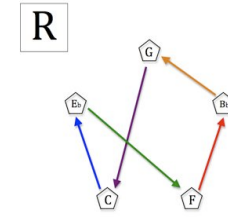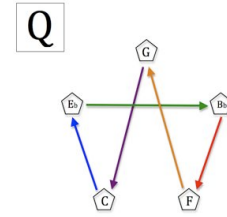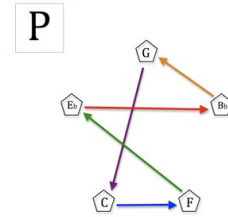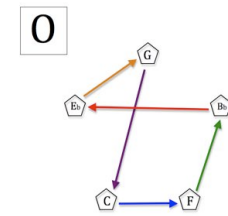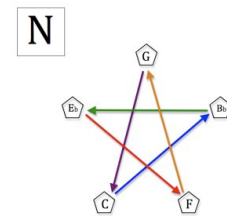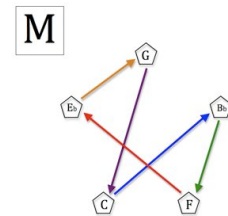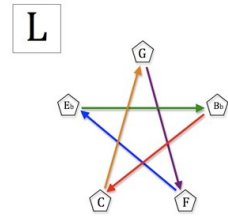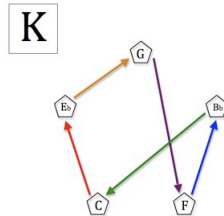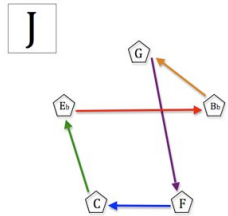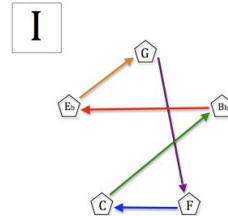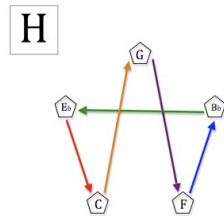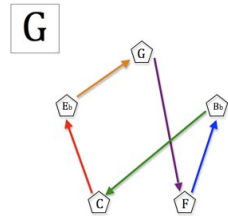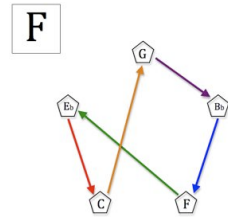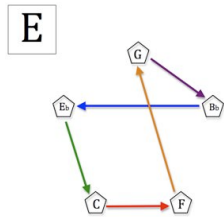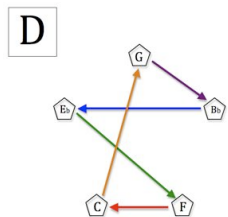
NEXUS   All 24 possible
unidirectional loops A-X

Sandeep Bhagwati NEXUS

Music for 5 players in a wireless network

Emily Shapiro, Clarinet in Eb

wireless	movement

signal	drop-out	path	encounter

nexus	loop	between stable & variable field & agency send & receive intent & result	topology	speed	topography	people

Sandeep Bhagwati **NEXUS**
Music for 5 players in a wireless network

Navid Navab
machine improvisation

Michal Seta
wireless technology

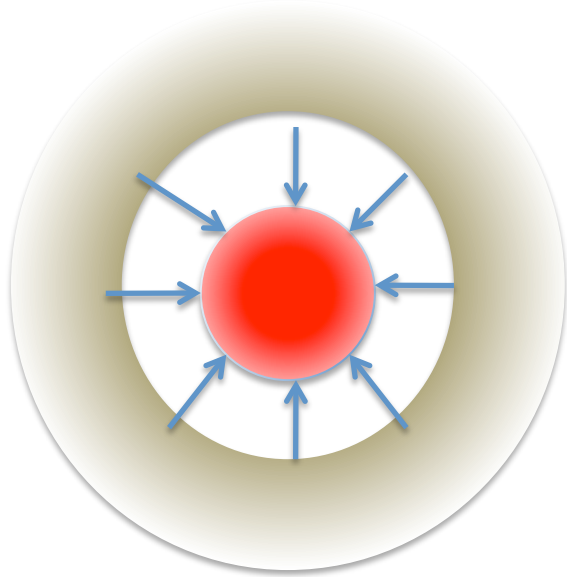Sandeep Bhagwati
score, concept and sound design

" Art no longer wants to respond to the excess of commodities and signs, but to a lack of connections."

Jacques Rancière

Problems and Transformations in Critical Art

in: Participation ed. C. Bishop, MIT Press, 2006, p.89

• focused interaction

CONCERT/THEATRE PERFORMANCE
but also:
political rally

• omnidirectional interaction

STREET PERFORMANCE
but also:
Berlin Philharmonie [Scharoun]

Ambulatory Concert: sound source travels through fixed audience (spatialized music)

How do performers interact with an audience?
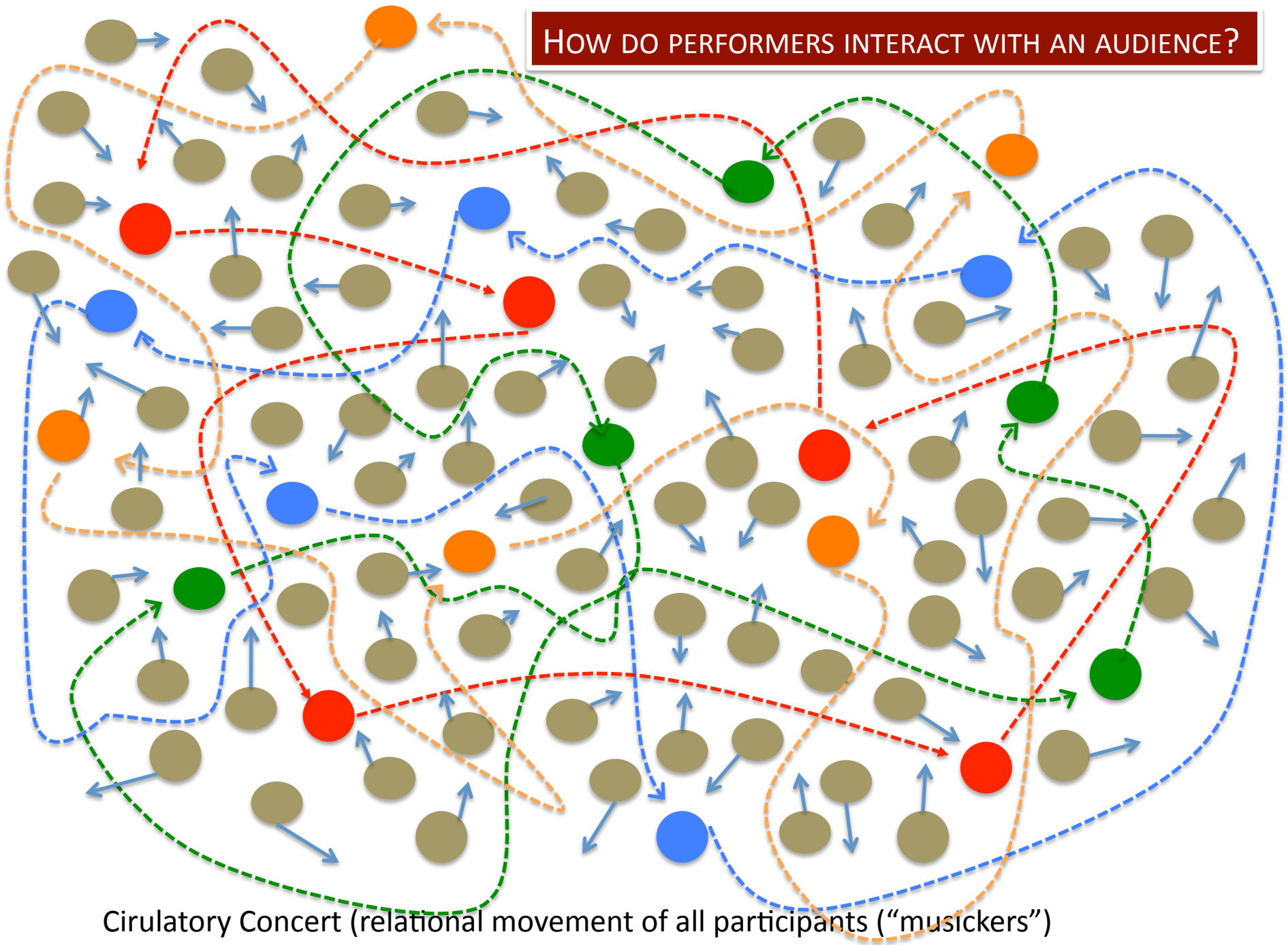
Cirulatory Concert (relational movement of all participants ("musickers")

Sandeep Bhagwati NEXUS

Music for 5 players in a wireless network

Guy Pelletier, Alto Flute in G