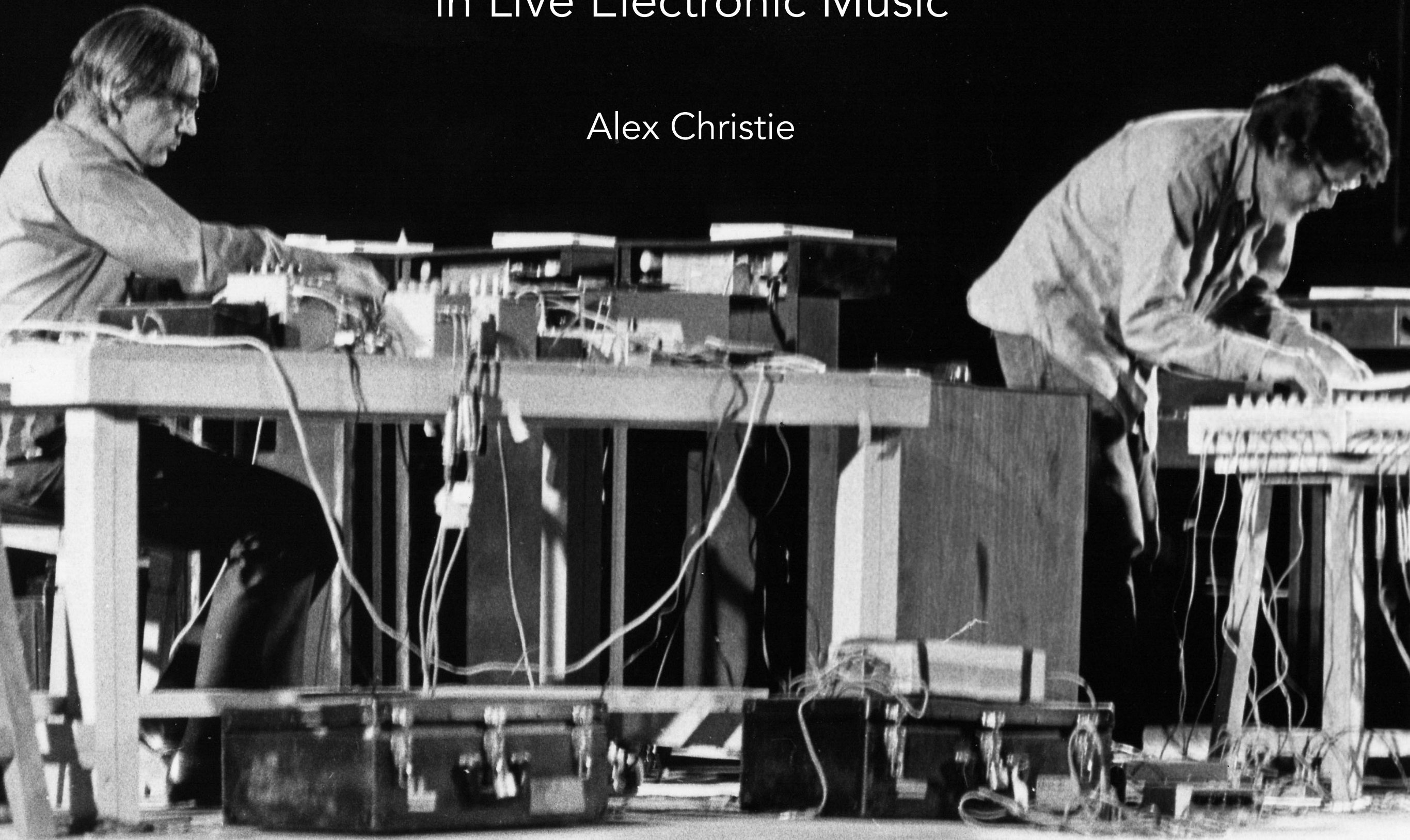


Indeterminacy and Improvisation in Live Electronic Music

Alex Christie



The American Avant-Garde

- Experimental and radical works that redefine music and avoid the “institution” of art/music
- Sometimes achieved through new sounds, compositional process, performance practice, presentation, collaboration between art forms
- Examine works/artists that explore:
 - the role of composer/performer in electronic music
 - indeterminacy
 - improvisation



Bebe and Louis Barron
(1925-2008) (1920-1989)

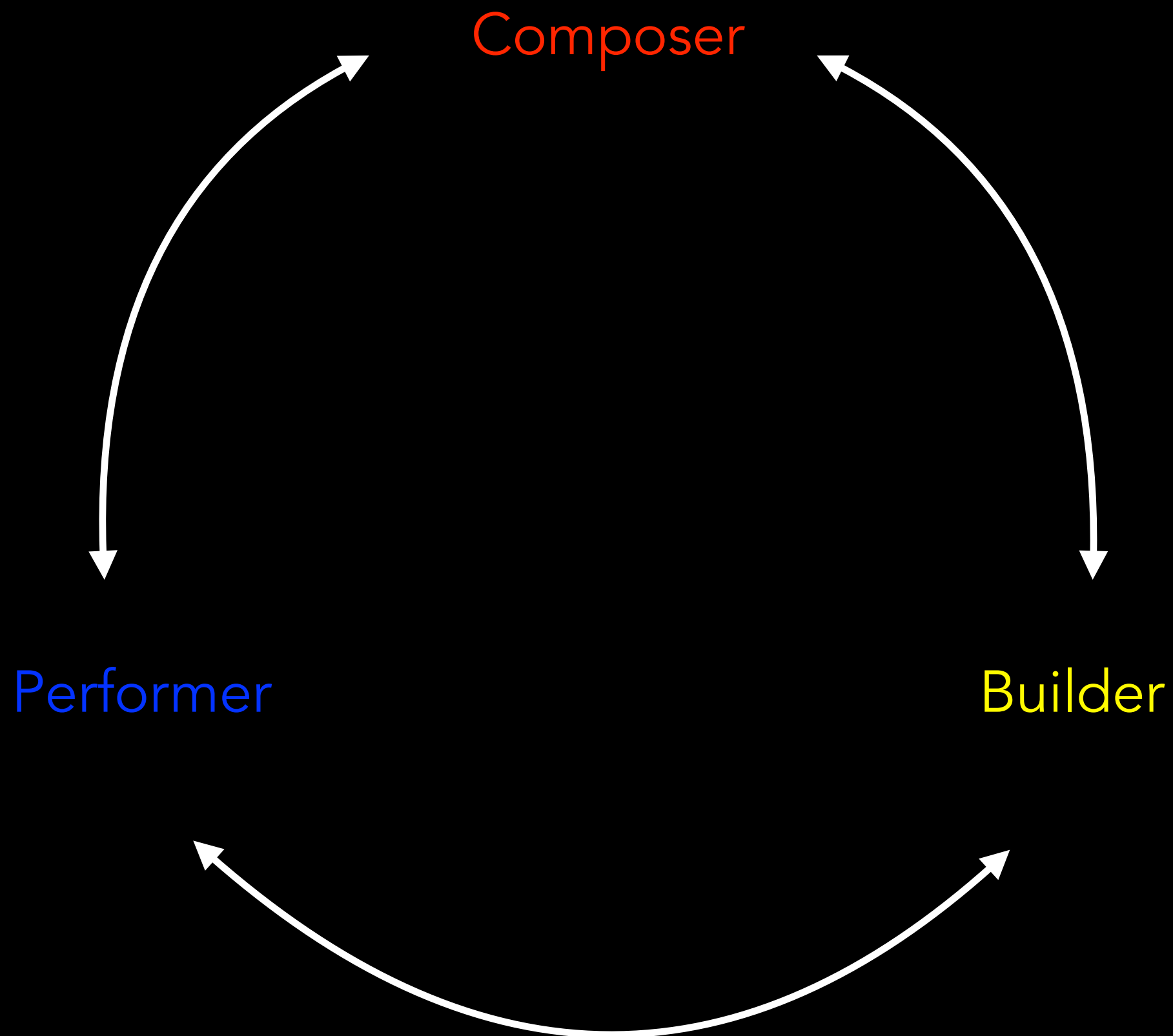


- 1950's - started composing electronic music for tape
- Bebe was experienced composer, Louis experience solderer
- Based in New York
- Had early access to tape machine and built a lot of electronics

Bebe and Louis Barron
(1925-2008) (1920-1989)



Forbidden Planet (1956)



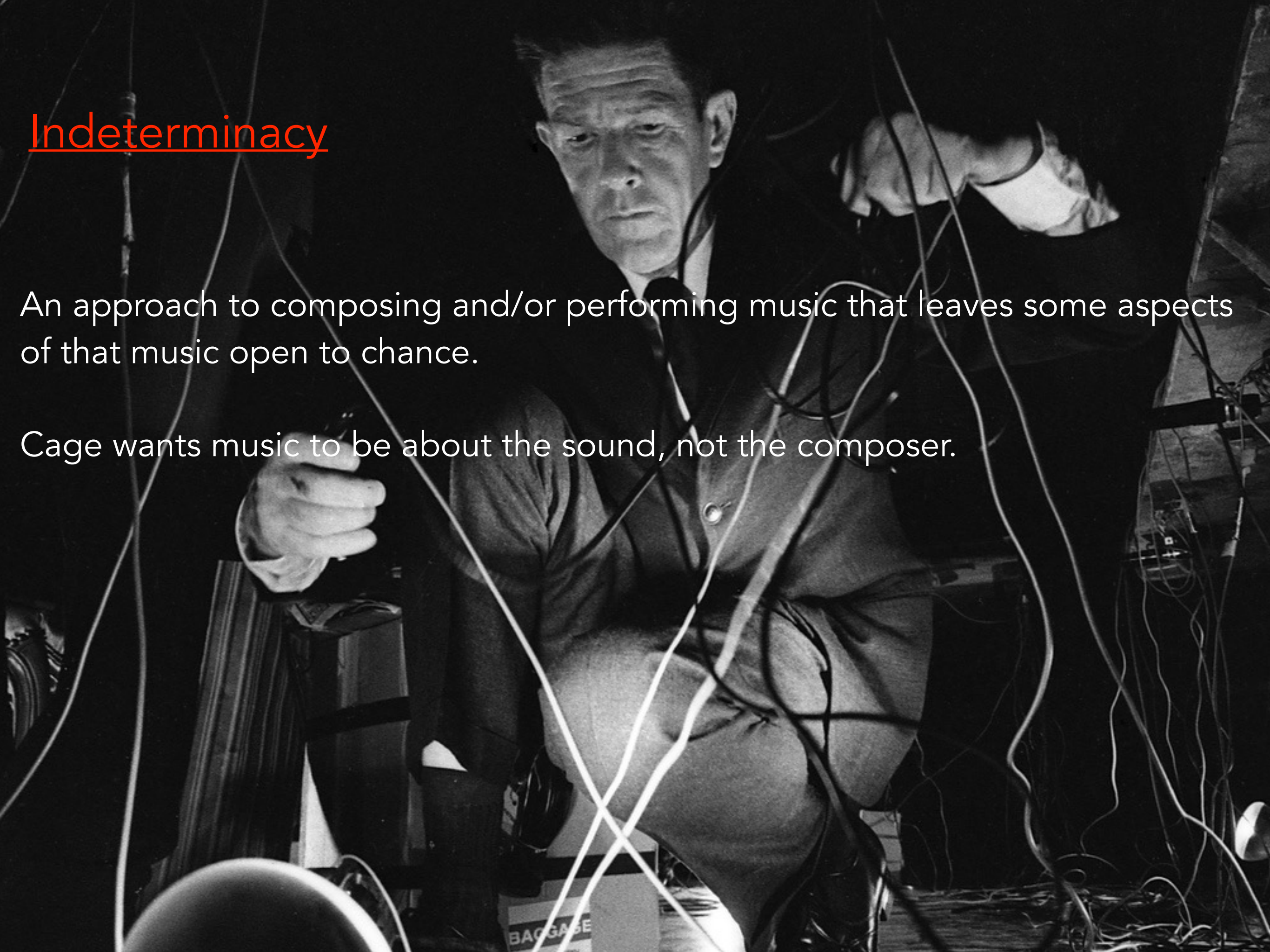
John Cage
(1912-1992)



Indeterminacy

An approach to composing and/or performing music that leaves some aspects of that music open to chance.















































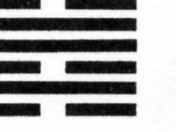















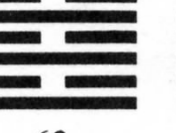

Cage wants music to be about the sound, not the composer.



Indeterminacy

- 1) Chance operations used to make compositional decisions/create a score
- 2) Chance in performance (yields different performances of the same piece)
- 3) Open notation for performer interpretation



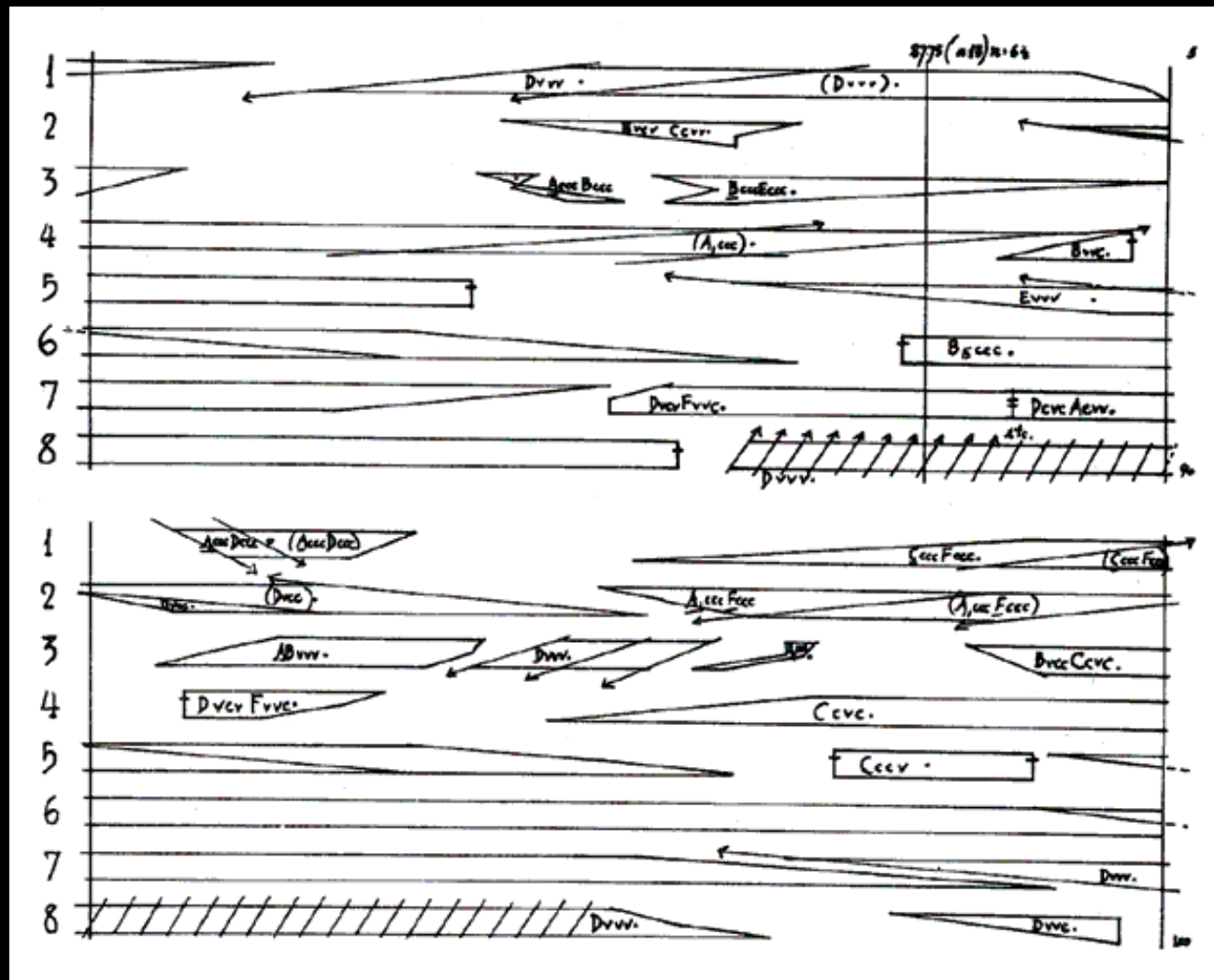
							
1	2	3	4	5	6	7	8
							
9	10	11	12	13	14	15	16
							
17	18	19	20	21	22	23	24
							
25	26	27	28	29	30	31	32
							
33	34	35	36	37	38	39	40
							
41	42	43	44	45	46	47	48
							
49	50	51	52	53	54	55	56
							
57	58	59	60	61	62	63	64

Hexagrams from the *I Ching* or *Book of Changes*

Williams Mix (1952/53)
by John Cage

Williams Mix (1952/53)

by John Cage



- Uses over 600 sounds
- Almost a year to complete
- Sounds are placed in one of 6 categories:
 - city
 - country
 - electronic
 - manually produced
 - wind
 - small requiring amplification
- Composed using the *I Ching*
- 192-page score
- Had a ton of help from the Barrons

1) Chance operations used to make compositional decisions/create a score

Cage/Cunningham/Tudor



gettyimages®
Herve GLOAGUEN



Merce Cunningham
(1938-2009)

- Dancer and choreographer (modern dance)
- Longtime collaborator with Cage (and Tudor)
- Frequently produced multi-media works and commissioned many artists

- Composer, electronic musician, pianist
- Longtime collaborator with Cage (and Cunningham)
- Designed and built his own electronic instruments



David Tudor
(1926-1996)

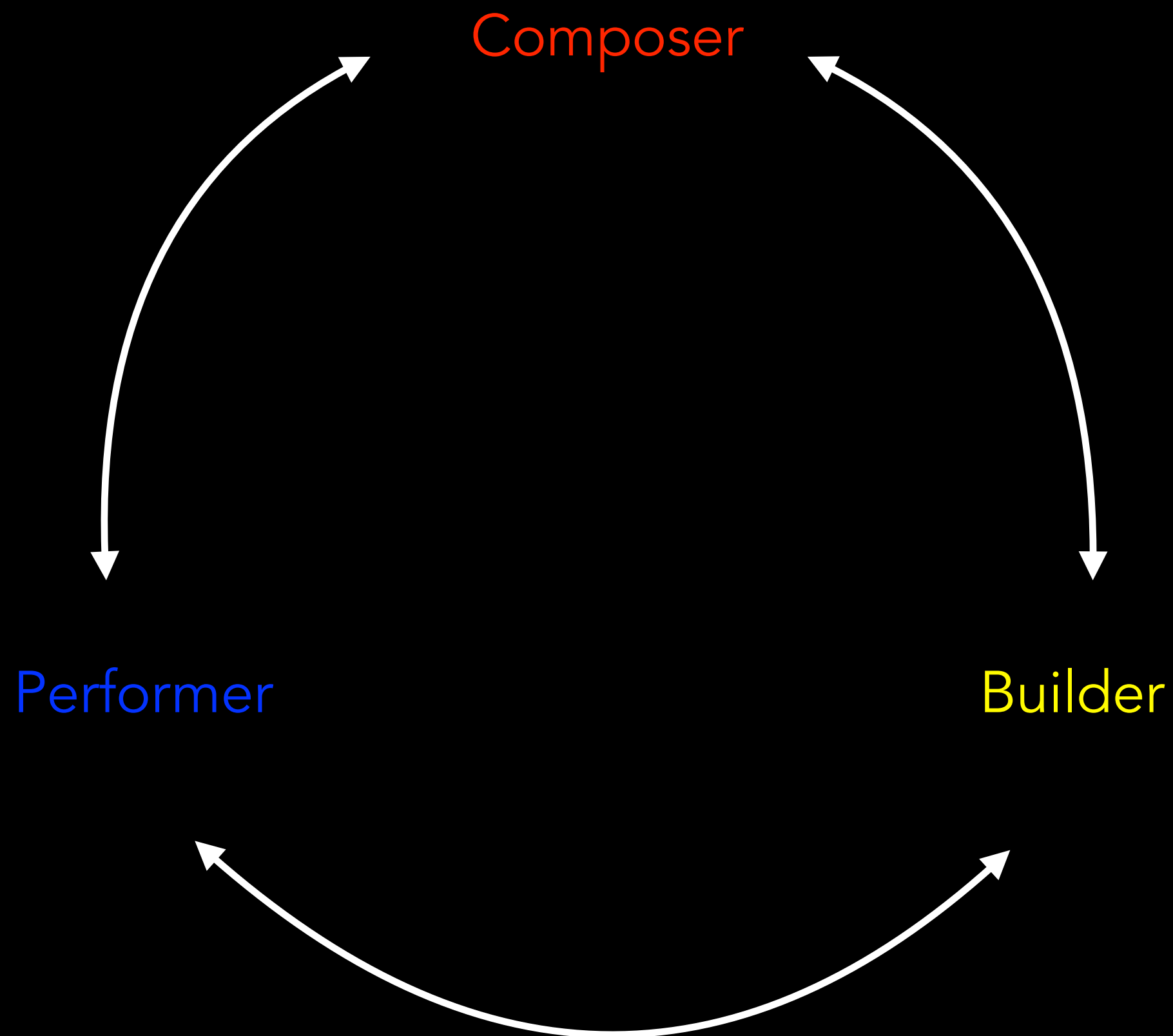
Live Electronic Music for the Cunningham Dance Company

- Tudor and Cage get bored of fixed electronic music and start doing it live (1950s/60s)
- Collaborate with Cunningham
- Live electronic music allows them perform without acoustic musicians
- Collaborate with many other musicians/performers/builders: Gordon Mumma, Alvin Lucier, Christian Wolff, David Behrman, Robert Moog
- New pieces are composed for live electronics calling for **improvisation**

2) Chance in performance (yields different performances of the same piece)

3) Open notation for performer interpretation

Three Works for Live Electronics:
Pulsers (1976)
by David Tudor



The ONCE Festivals (1961-1966, Ann Arbor Michigan)



Gordon Mumma
(b. 1935)



Robert Ashley
(1930-2014)

The ONCE Festivals

(1961-1966, Ann Arbor Michigan)



- First headed by Robert Ashley and Gordon Mumma
- Featured live electronic music, improvisation, composer-performers
- Non-Academically funded which meant open programming
- First non-European (really non-Darmstadt) festival of its kind
- Attracted jazz musicians and European musicians

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Improvisation

An exploration of any or all of the following things in real time:

- sound
- space
- musical vocabulary
- compositional form
- interaction between players
- probably a ton of other things, too

Improvisation

One must...

- listen
- react
- focus
- feel
- anticipate
- recall
- probably a ton of other things, too

Ikue Mori



Ikuo Mori



Drummer for No-Wave
band *DNA* (1979-1982)

mostly performer



Drum Machines
(1980's-2000)

starts composing more
becomes part of DTNY
improv scene



Laptop
(2000-present)

designs software
instruments for laptop
improv and composition

Ikuu Mori/DNA



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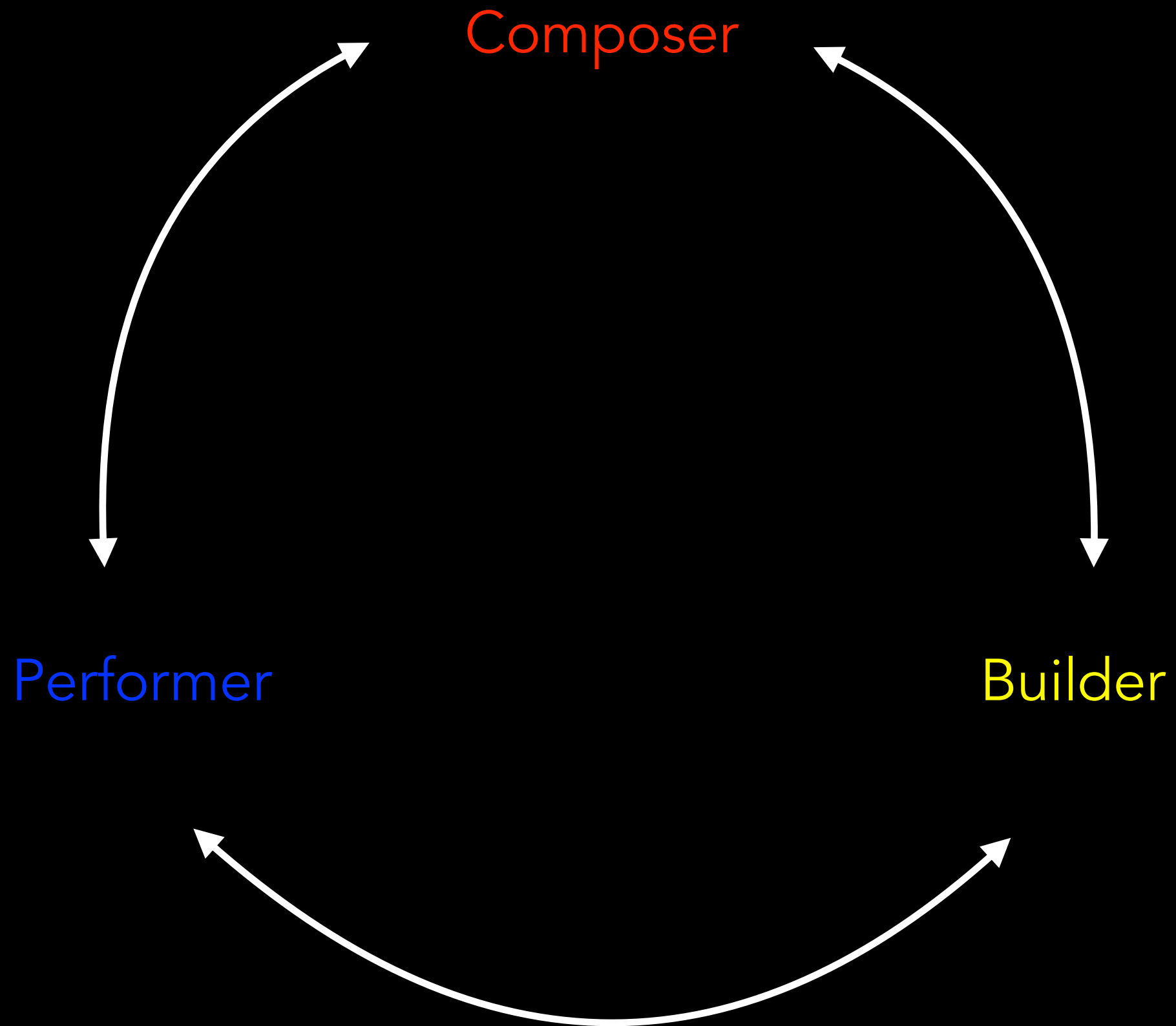
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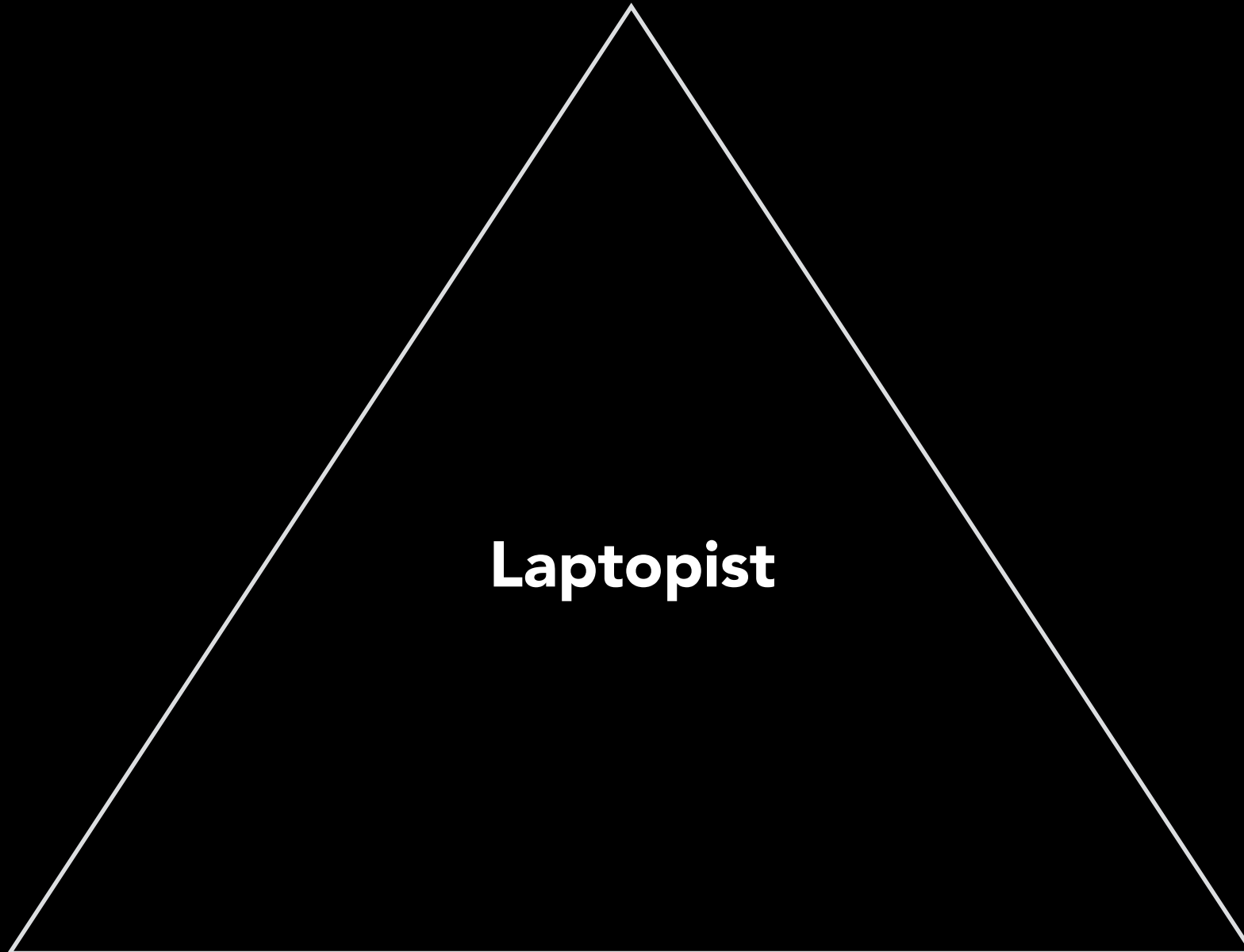


Composer

Laptopist

Performer

Builder



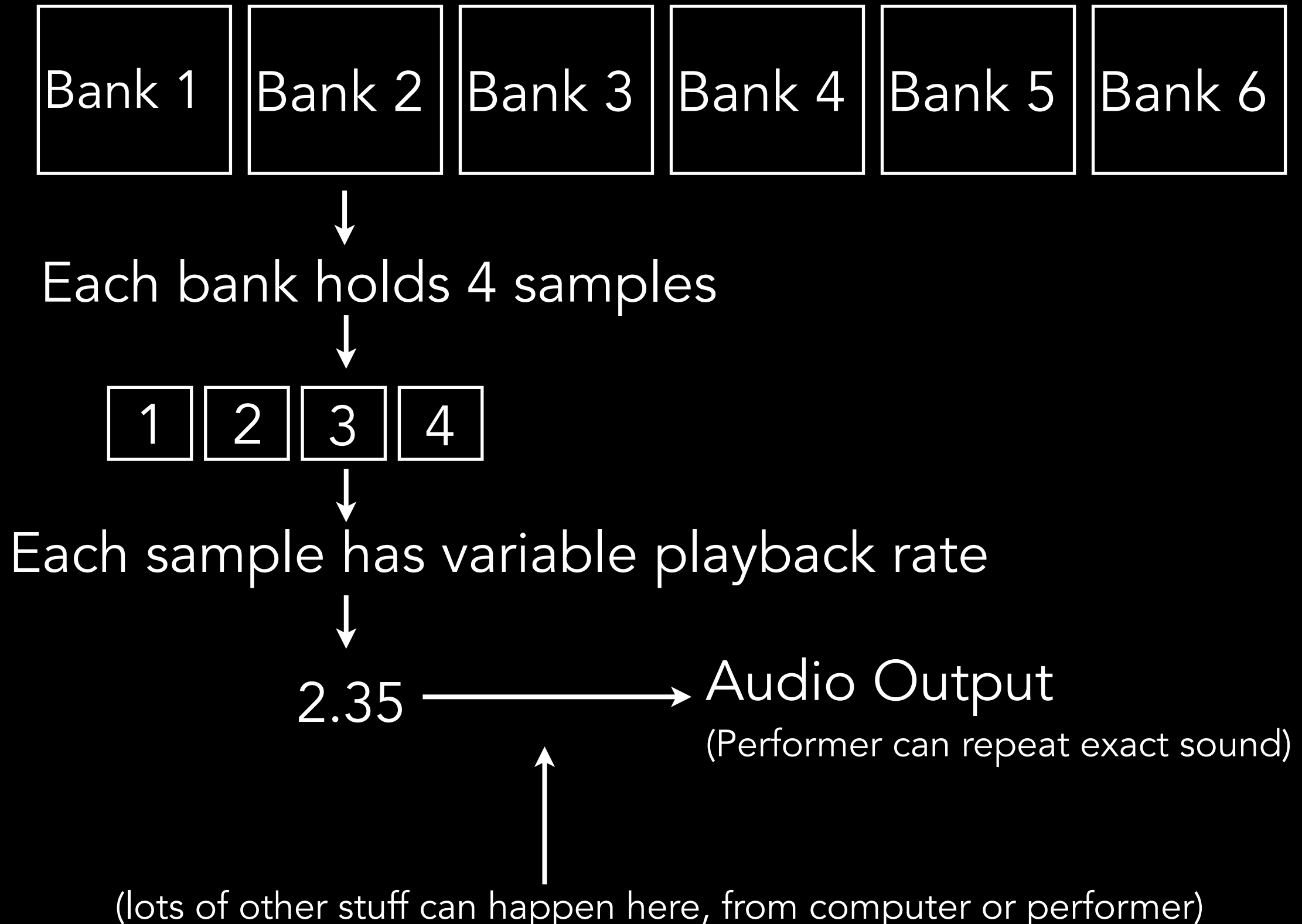
What do you do with an instrument that can make any/
every sound?

Focus its voice. Impose limitations.

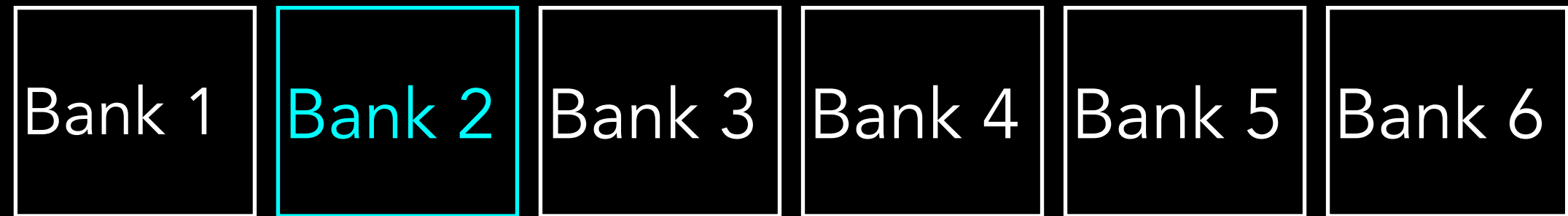
Divide decision-making between human and machine.

This requires indeterminacy and improvisation.

Basic Construction of My Laptop Instrument



Performer selects bank and triggers sample ("E")



Computer selects sample



Computer: indeterminacy
Human: improvisation

Computer selects playback rate

2.35

Audio Output

(Performer can repeat exact sound)

(lots of other stuff can happen here, from computer or performer)

Levels of Sound and Compositional Structure

Global Level:

Form/Structure created by musical phrases

Created by adjustments or gradual changes in specific compositional parameters.
For instance, a global expansion in pitch range.

Phrase Level:

String/sequence of samples

Musical activity achieved through looping ("G"), panning ("H"), pitch shifting ("O", "L"), etc. Direct and immediate manipulations of compositional parameters.

Unit Level:

Single sample

This determines musical content.

Composer

Laptopist

Performer

Builder

