

Contextualizing Musical Interface Design

Interfaces, People, Music, Context

Mike Mulshine 2022

Musical Interface

Cello

Synthesizers

Saxophone

Midi Keyboards

Piano

Musical Interface

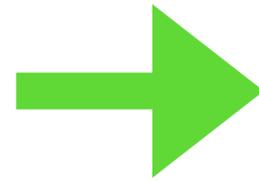
Instruments

Violin

Minimoog

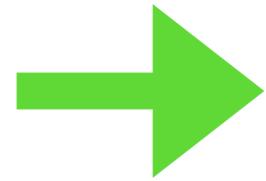
Theremin

Person

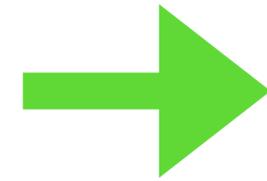


**Musical
Interface**

Person

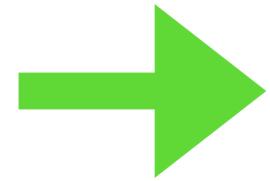


Interface

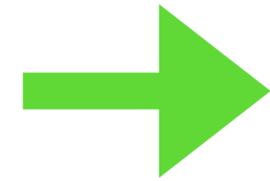


Music

People

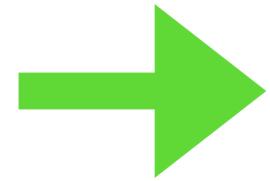


Interface

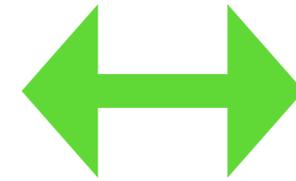


Music

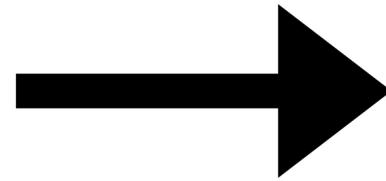
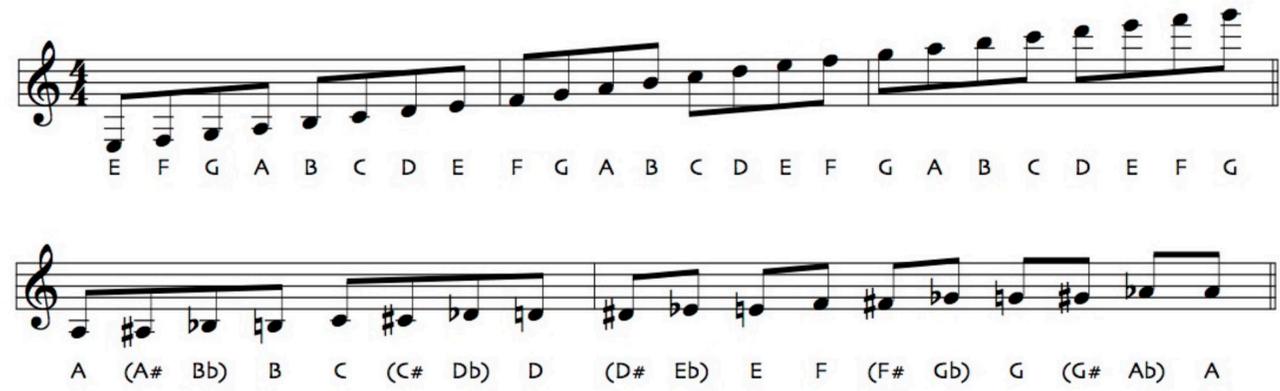
People



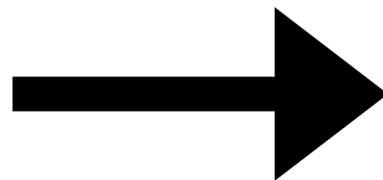
Interface



Music

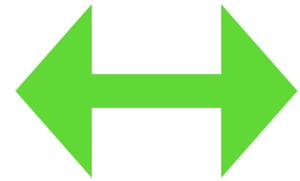


Music → Interface



Music  Interface

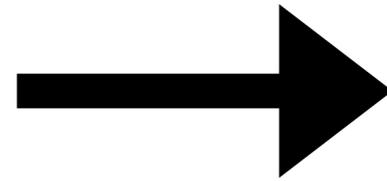
People



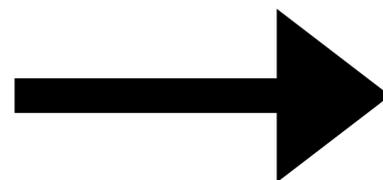
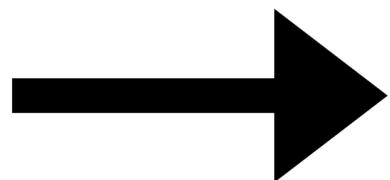
Interface



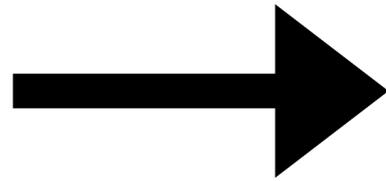
Music



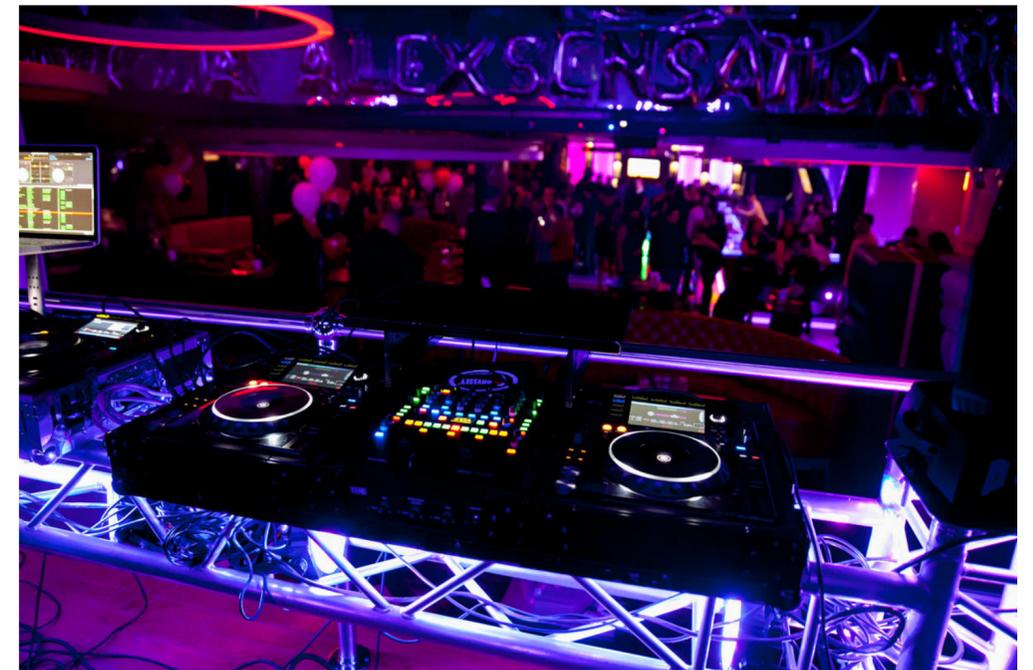
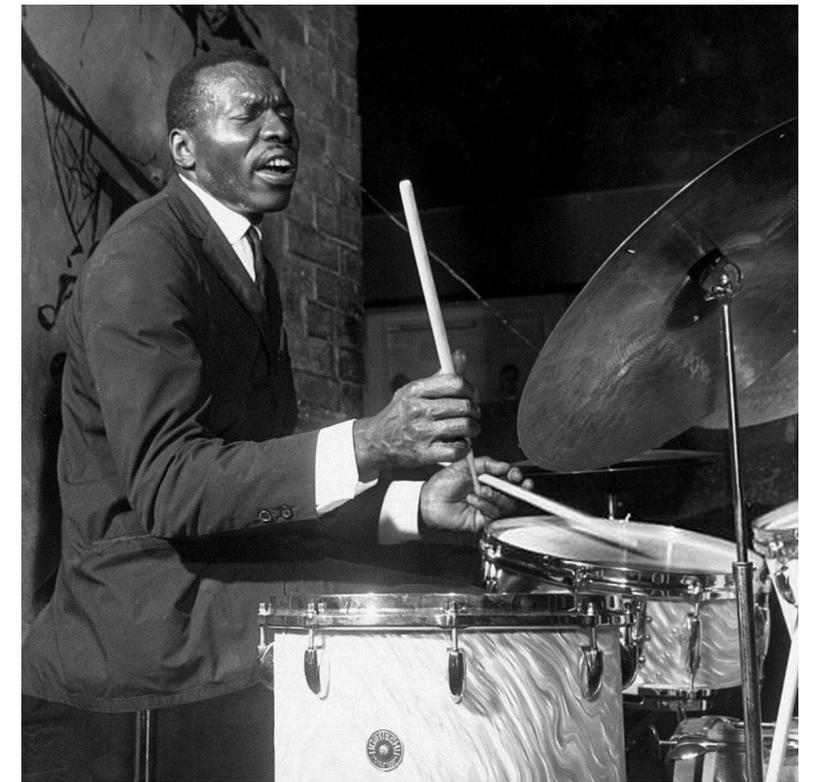
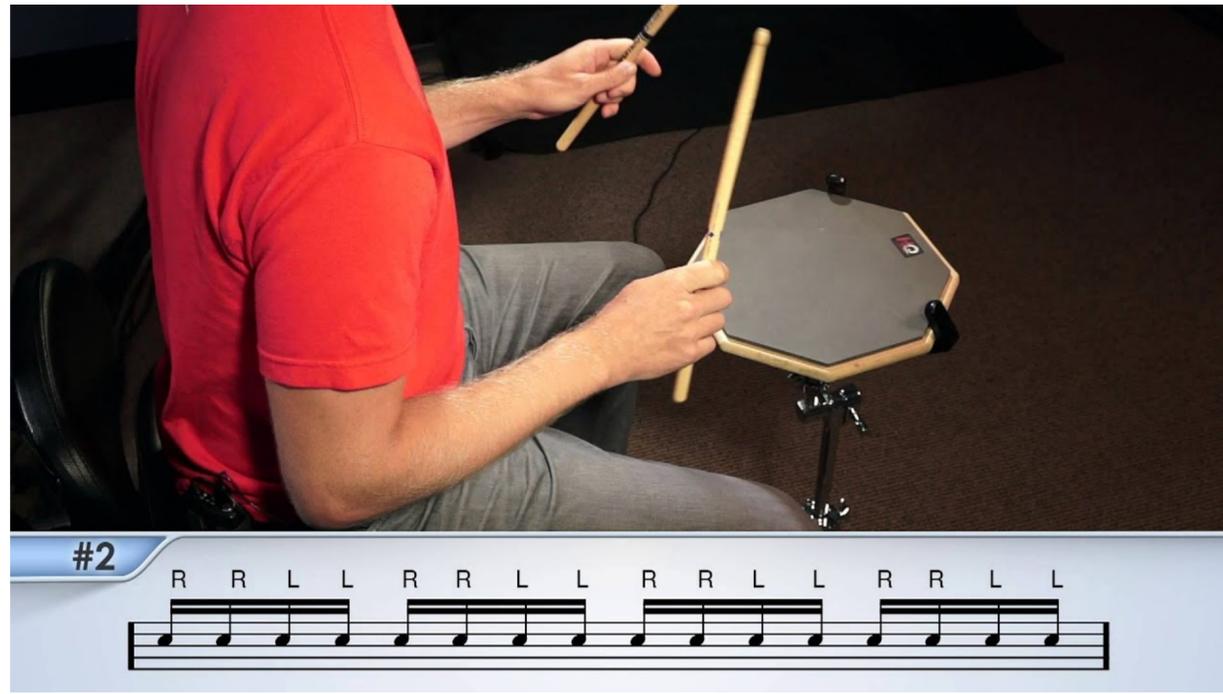
Interface → People



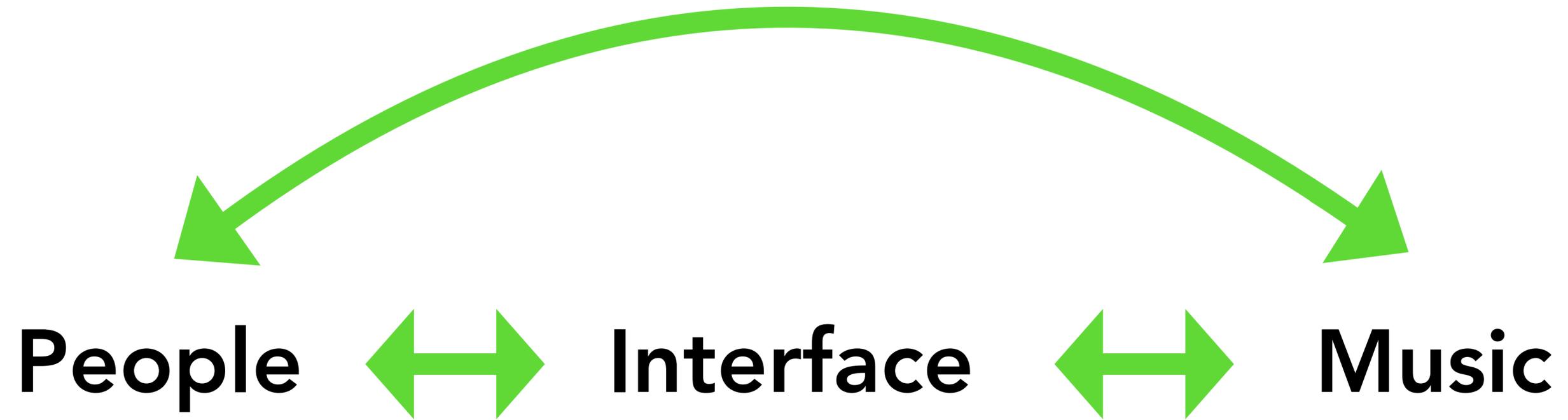
Interface → People → Music



Interface → People



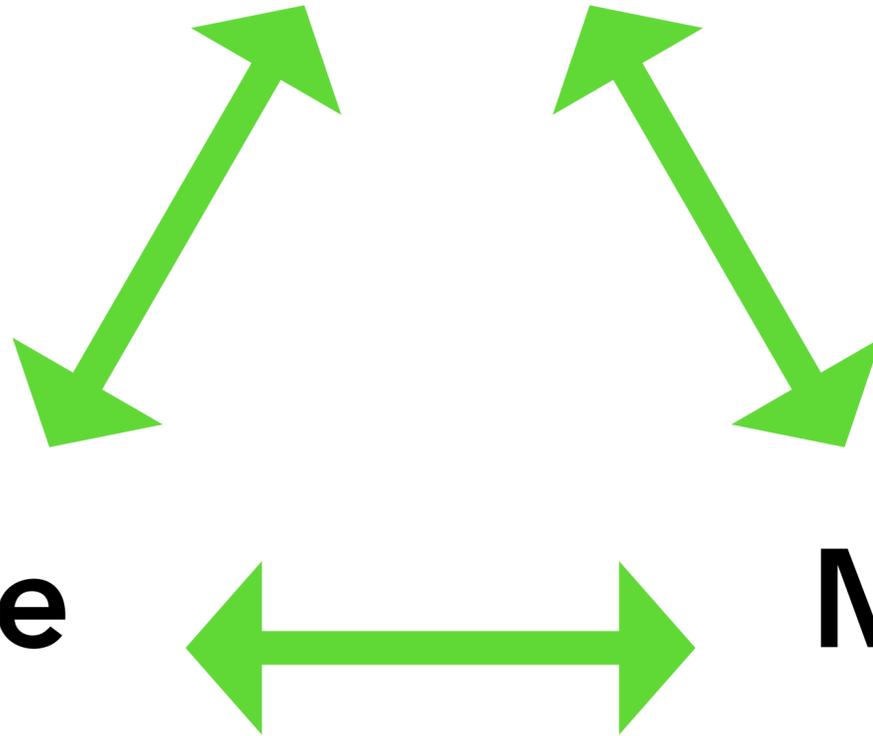
Interface → People → Music



Interface

People

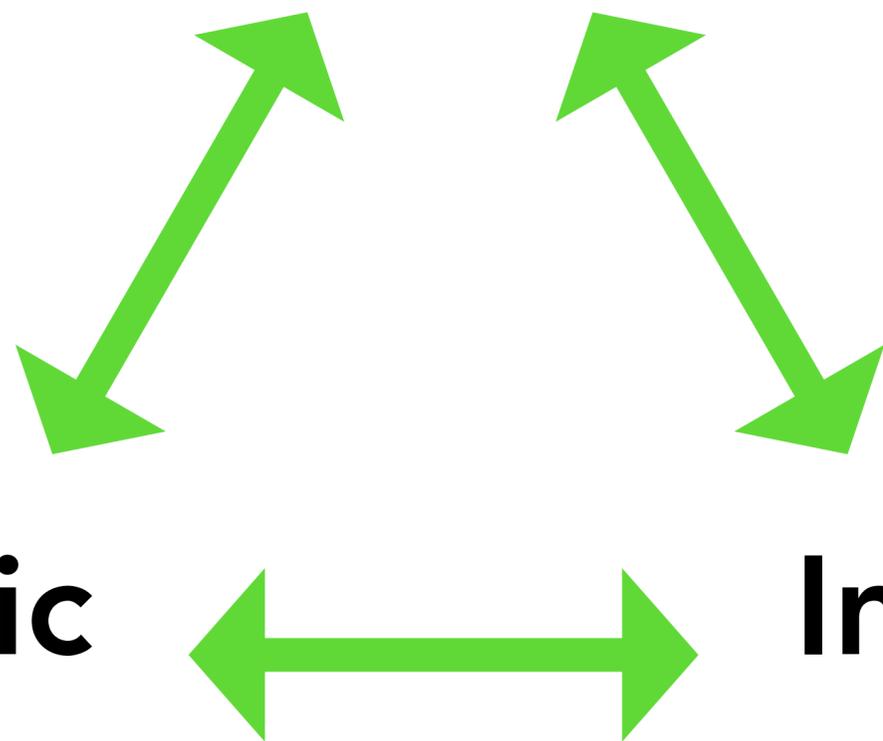
Music



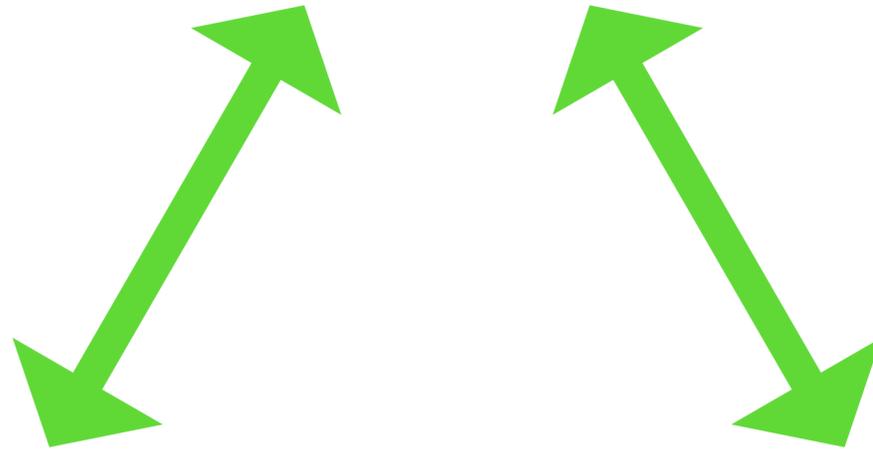
People

Music

Interface



Music

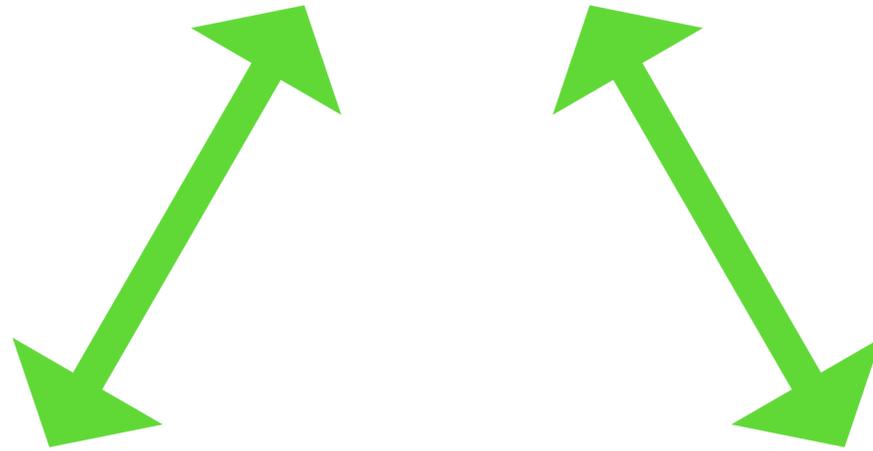


Interface



People

Music

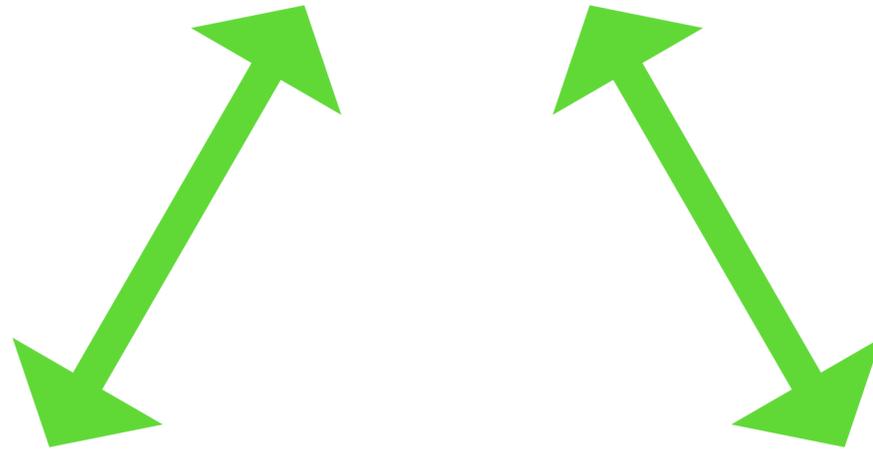


Interface



People

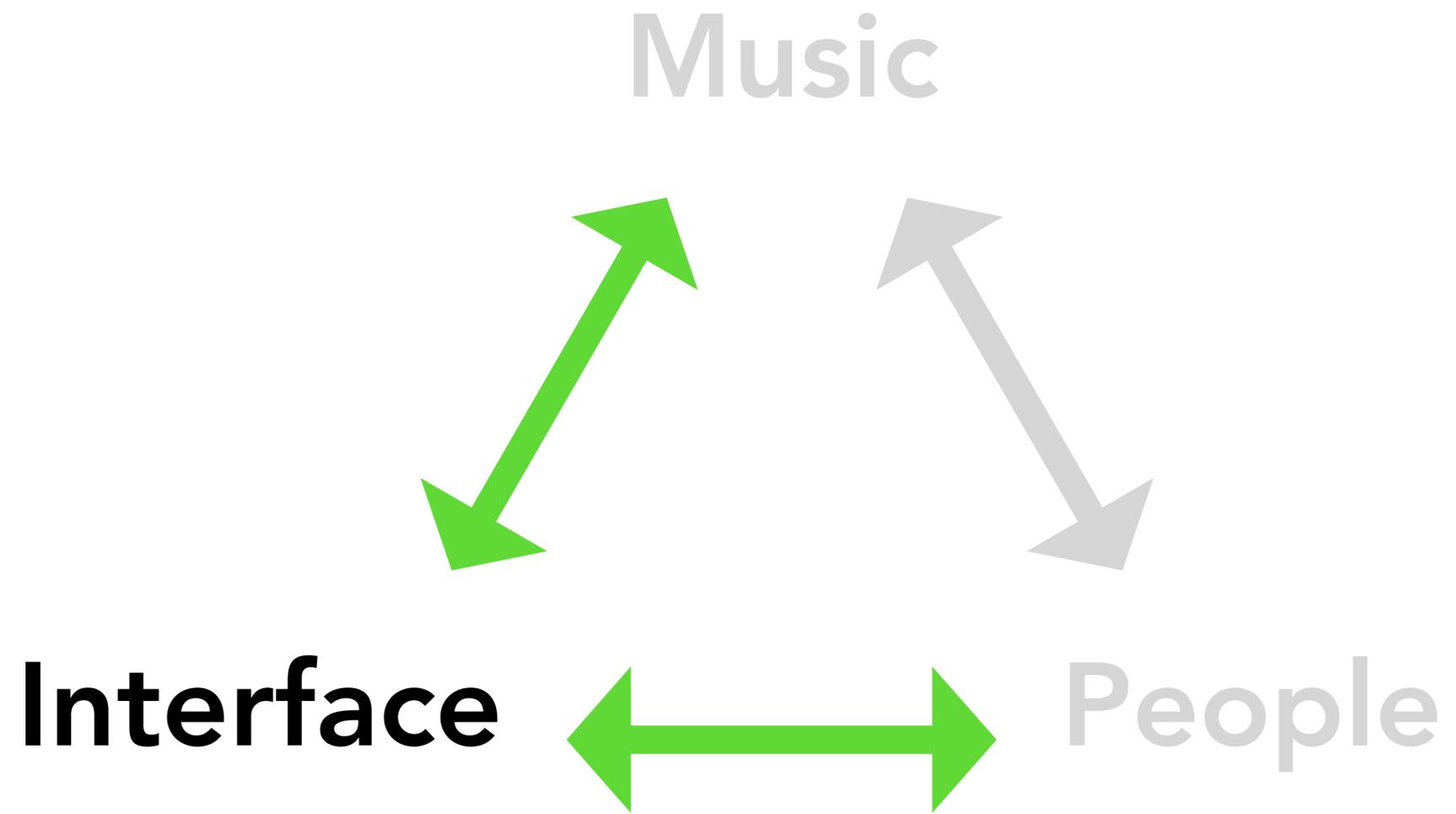
Music

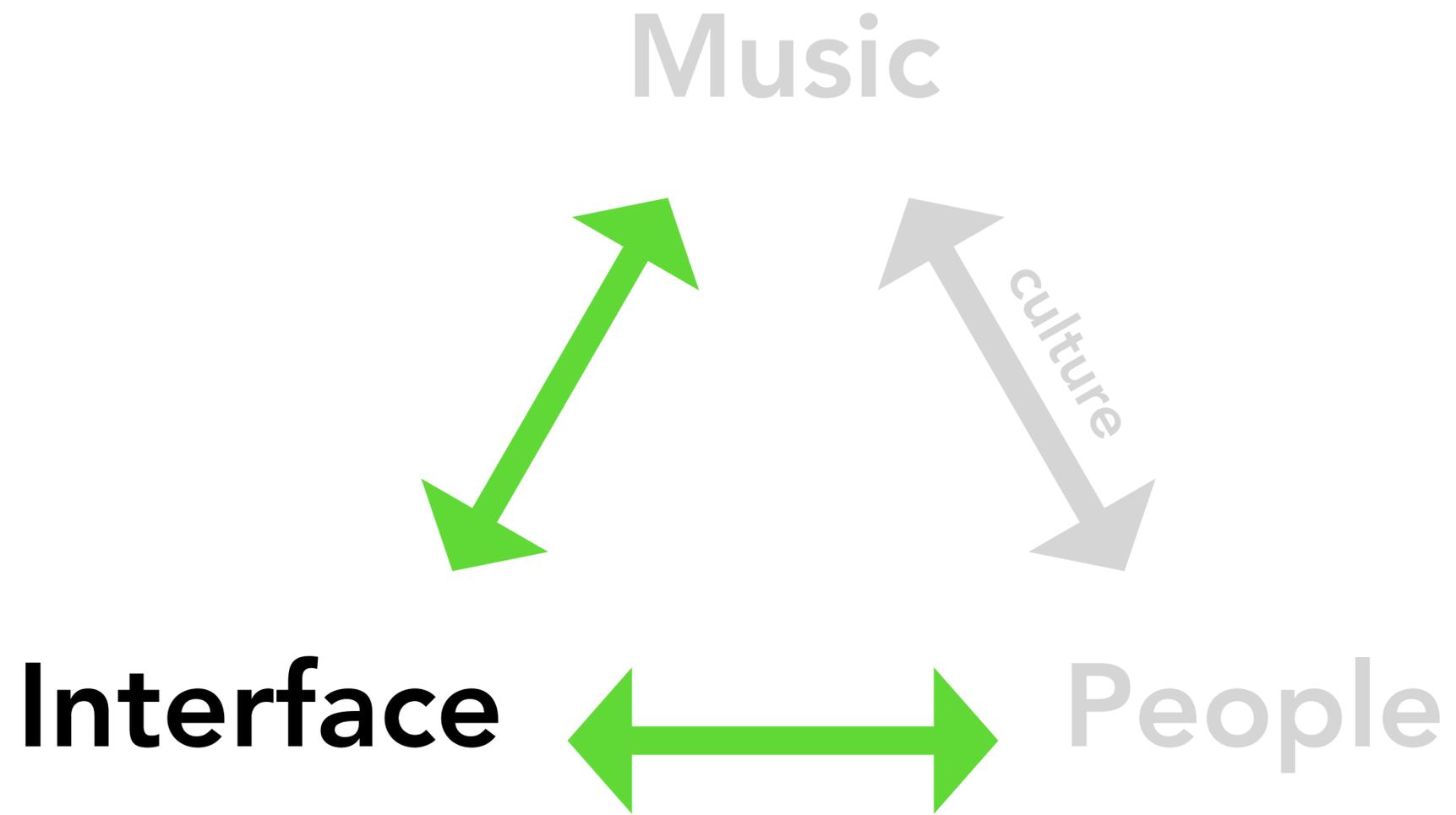


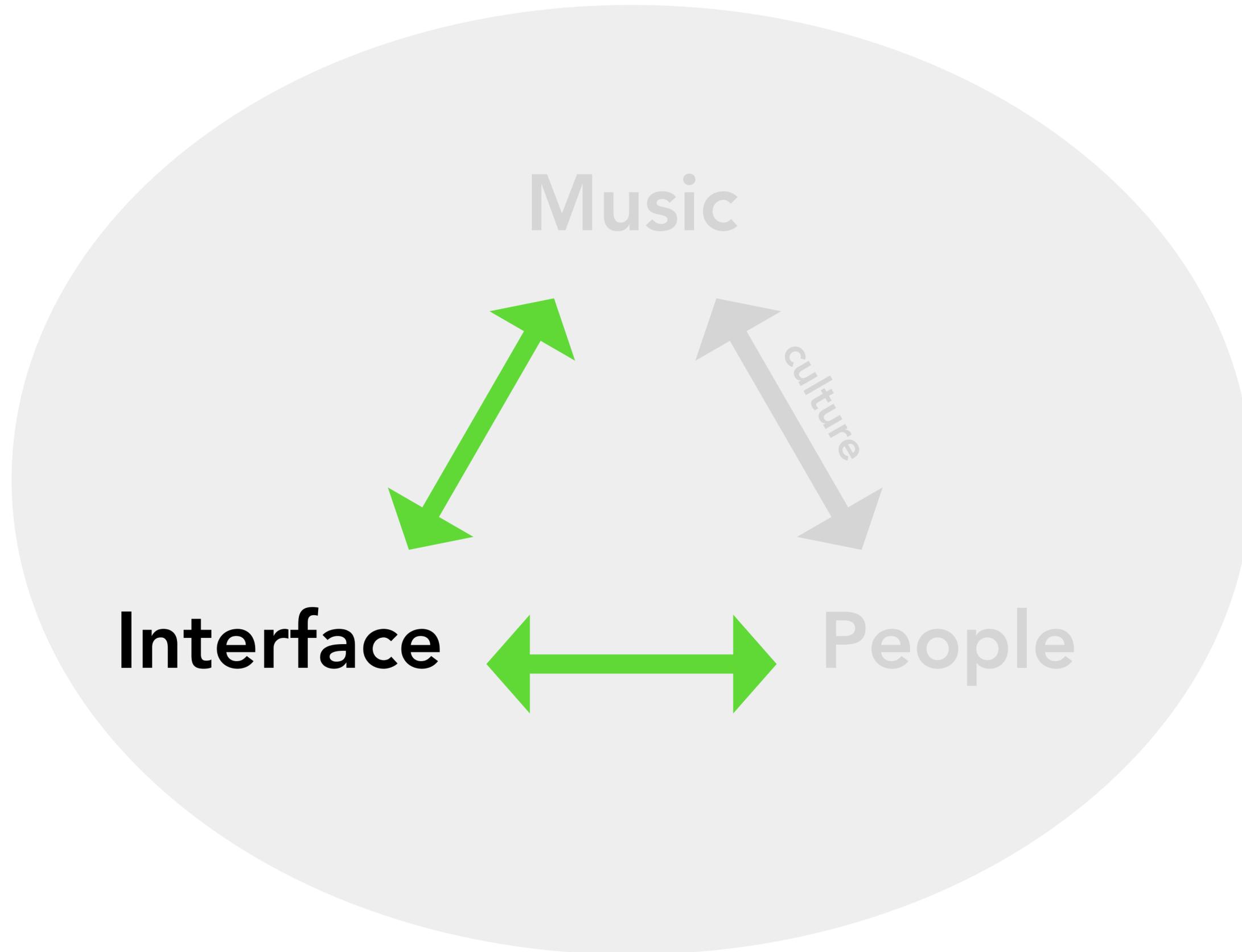
Interface



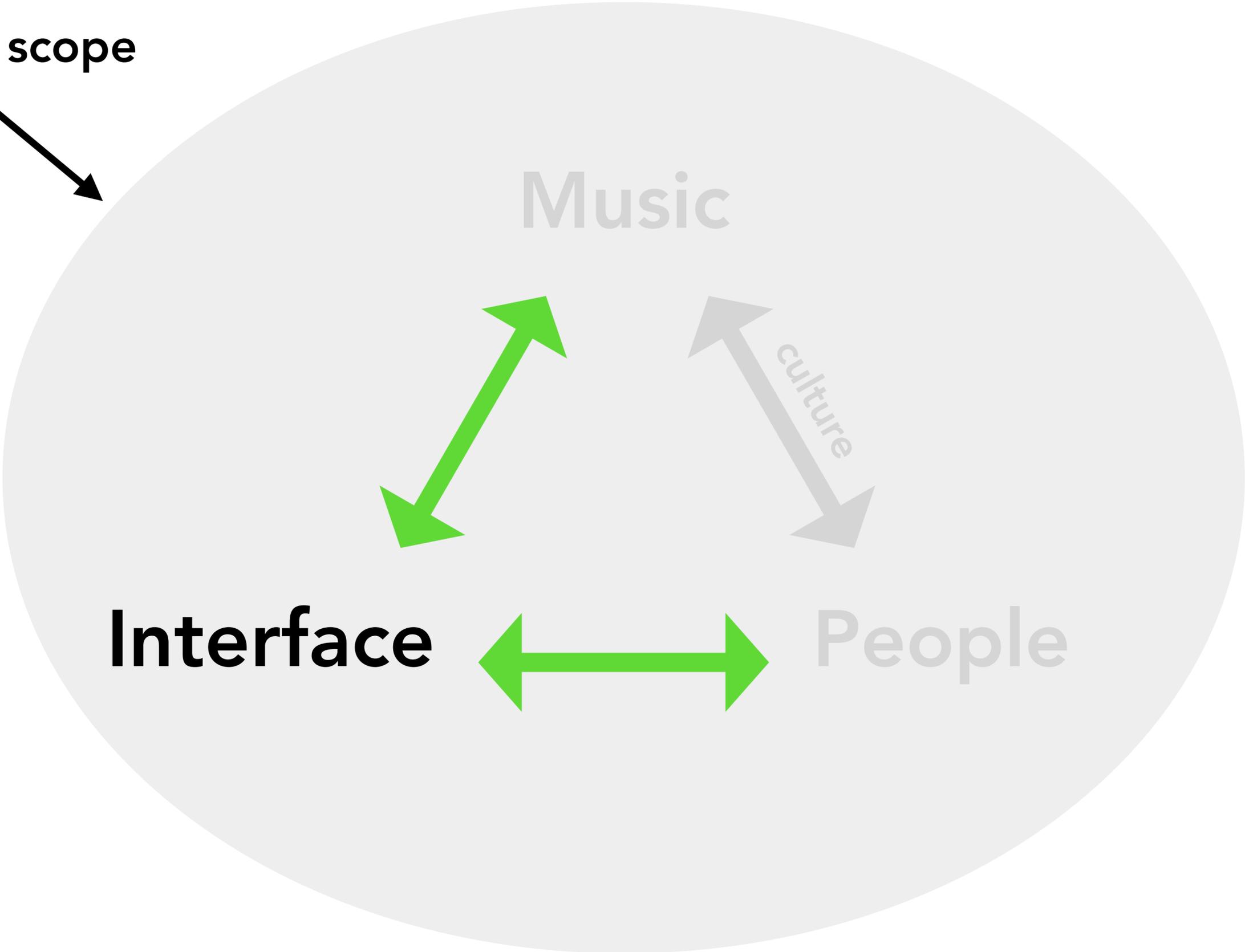
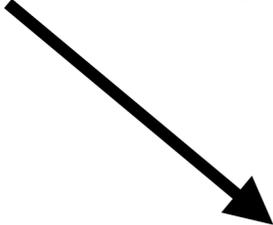
People







Context / scope



Music

Interface

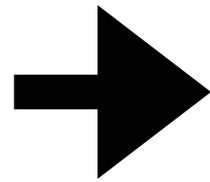
People

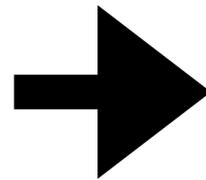
culture

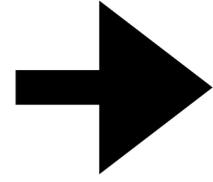
Why think about all this stuff?

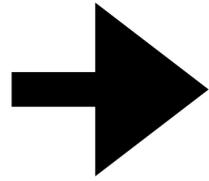
What *music / musical practice* are you designing for?

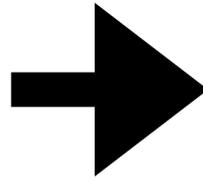
Music  Interface

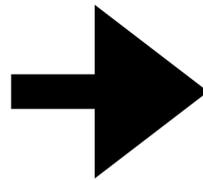




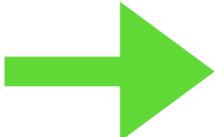








Who are you designing for?

People  **Interface**

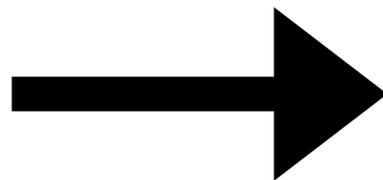


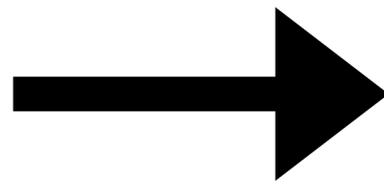
designing for ...**"traditional"** musical context

designing for ...**"traditional"** musical context

Build on music-technical knowledge

"Copying an instrument is dumb, leveraging expert technique is smart." - Perry Cook





Yamaha Digital Saxophone



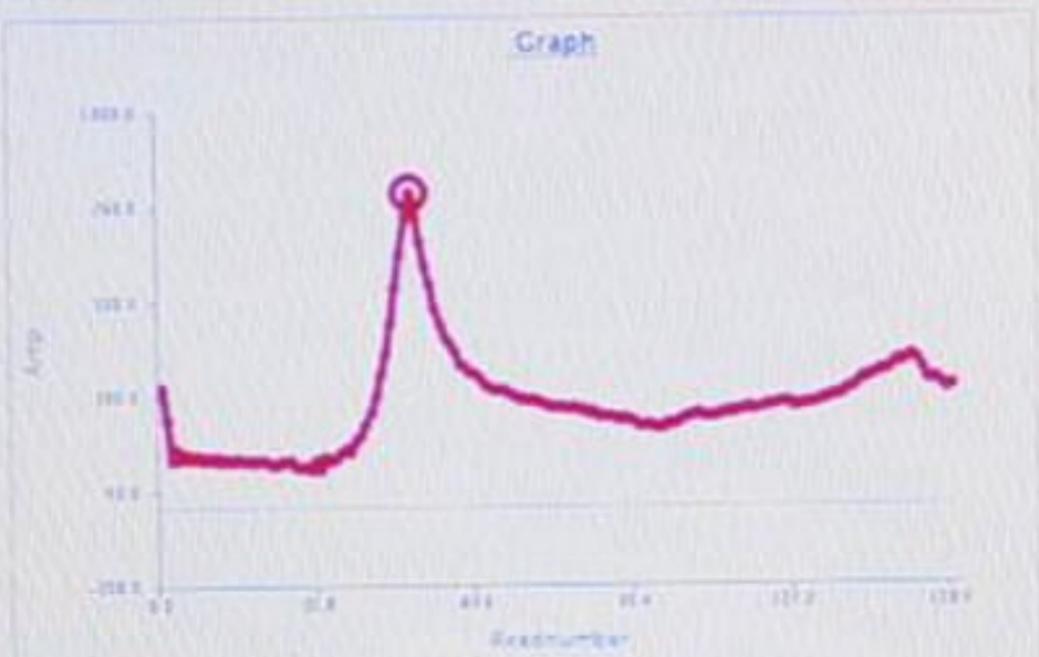
***THE NEW
INSTRUMENT
FROM YAMAHA***

YDS - 150

The Birl, by Jeff Snyder

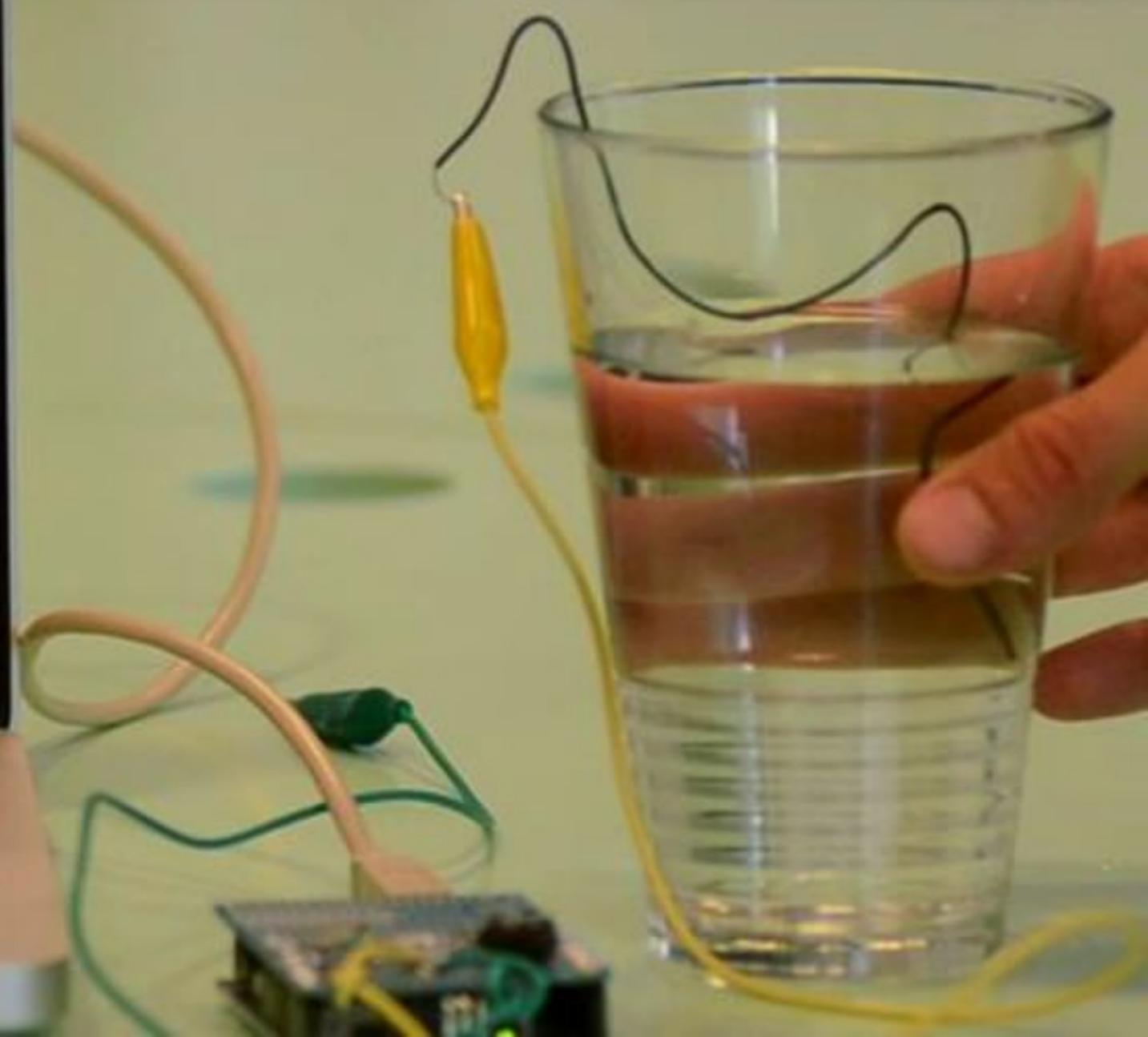


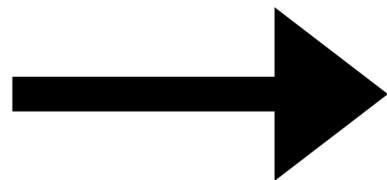




- Nothing
- Touch
- Grab
- In water

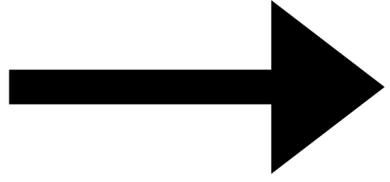
MacBook Pro





KRAFT
music





designing for ...**"traditional"** musical context

Build on music-technical knowledge

"Copying an instrument is dumb, leveraging expert technique is smart." - Perry Cook

Add new modes of control

"Some players have spare bandwidth, some do not" - Perry Cook



TouchKeys, by Andrew McPherson (QMUL)





designing for ...non-**"traditional"** musical context

designing for ...non-"traditional" musical context

Make people feel like they're playing a traditional instrument

Guitar Hero



designing for ...non-**"traditional"** musical context

Make people feel like they're playing a traditional instrument

Make familiar music with different methods

POWER
ON
OFF

Roland

PATTERN WRITE
1st PART
2nd PART
MANUAL PLAY
COM-POSE
PATTERN CLEAR
STEP NUMBER
PRE-SCALE
TRACK CLEAR

INSTRUMENT-SELECT RHYTHM TRACK
MT 5 CP 8
LT 4 CB 9
SD 3 CY 10
BD 2 OH 11
AC 1 CH 12

MANUAL *
MEASURES AUTO FILL IN
SLOW FAST

TEMPO
0 1 2 3 4 5 6 7 8 9 10

LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL
	TONE	TONE	TUNING	TUNING	TUNING				TONE		DECAY	DECAY
	DECAY	SNAPPY	LOW CONGA	MID CONGA	H CONGA	CLAVES	MARACAS					
ACCENT	BASS DRUM	SHARE DRUM	LOW TOM	MID TOM	HI TOM	RIM SHOT	HAND CLAP	COW BELL	CYMBAL	OPEN HI HAT	CLSD HI HAT	

Rhythm Composer TR-808
Computer Controlled

MIN MAX
MASTER VOLUME

BASIC-VARIATION
A AB B

PRE-SCALE
1 2 3 4

STEP NO
1st PART
2nd PART

BASIC RHYTHM
1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4

INTRO SET FILL IN TRIGGER
TAP

I/F-VARIATION
A B



Rhythm Composer TR-808

Computer Controlled

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 1
- 2
- 3
- 4



5 1 1 1 130 Gmaj 4/4



Library



Search Library

- Drum Kit
- Bluebird
- Brooklyn
- Detroit Garage
- East Bay
- Four on the Floor
- Heavy
- Neo Soul
- Portland
- Retro Rock
- Roots
- Scientific Method
- Slow Jam
- Smash
- SoCal**
- Sunset

Instrument rack with controls:

- SoCal (Drum Kit)
- Modern Stack
- My Guitar
- My Vocal
- Grand Piano
- Classic Rock Organ
- String Section

MIDI piano roll with tracks:

- Intro, Verse 1, Chorus, Verse 2 (Timeline)
- Bass (CD)
- My Guitar
- My Vocal
- Piano
- Organ
- Strings

Rock



Straightforward rock beats on a natural, versatile kit.

- Chorus
- Presets
 - Crash the Party
 - Echo Park
 - Golden State
 - Hall-pipe
 - Mistape
 - New Kicks
 - Ocean Boulevard
 - Paper Hearts

Drum kit visualization with volume sliders for:

- Low
- Soft
- Crash

Drum kit visualization with volume sliders for:

- Percussion
- Hi-Hat
- Kick & Snare

Save...

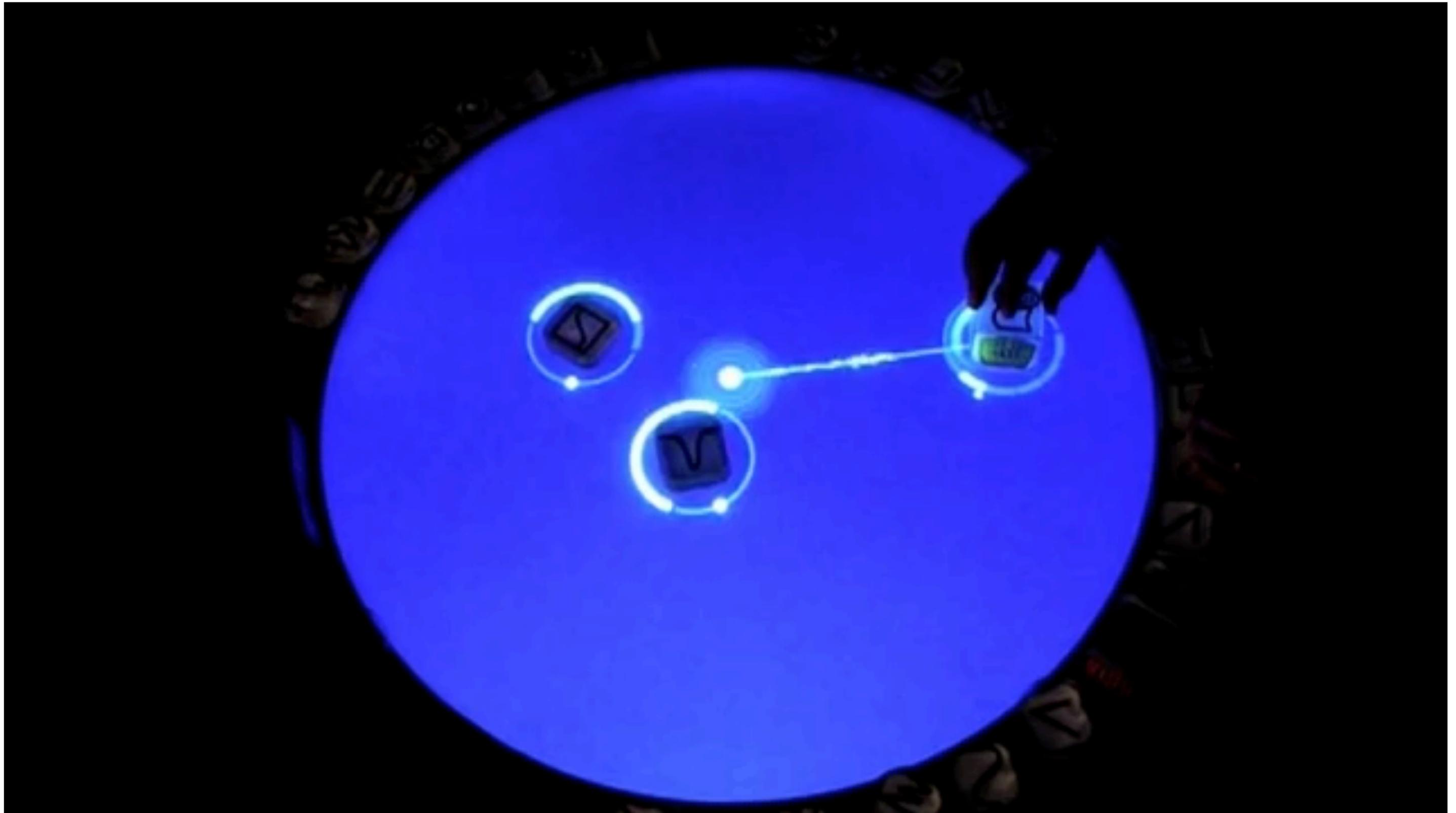
designing for ...non-"traditional" musical context

Make people feel like they're playing a traditional instrument

Make familiar music with different methods

Or, imagine new intuitive mappings between gestures and sounds

Reactable





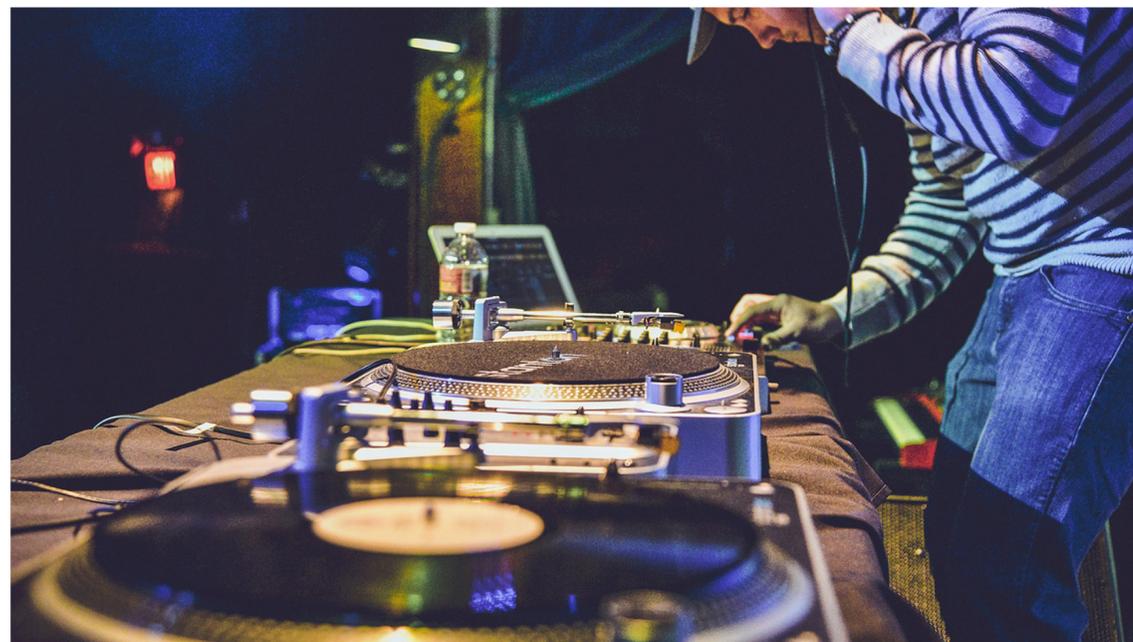
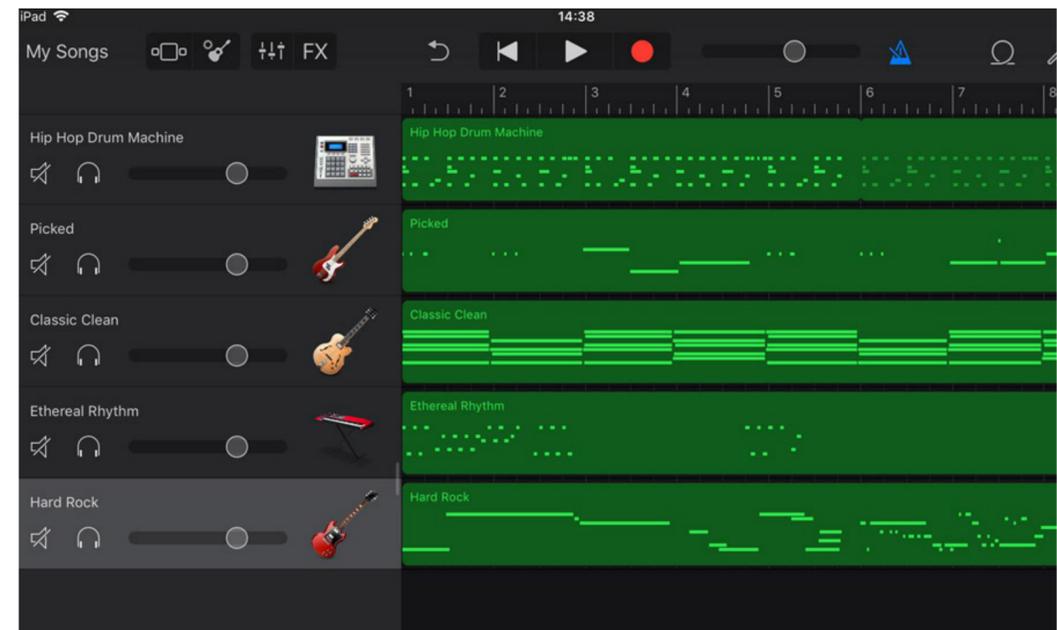
designing for ...**accessibility**

designing for ...**accessibility**

Easy to get in to, rewarding to grow with

“Low ‘entry fee’ with no ceiling on virtuosity” - Matt Wright (!), David Wessel

“Music now, subtlety later...” -Perry Cook



designing for ...**accessibility**

Easy to get in to, rewarding to grow with

“Low ‘entry fee’ with no ceiling on virtuosity” - Matt Wright (!), David Wessel

“Music now, subtlety later...” -Perry Cook

Leverage the technical and physical capabilities of users

Jamboxx



Jamboxx



designing for ...**accessibility**

Easy to get in to, rewarding to grow with

“Low ‘entry fee’ with no ceiling on virtuosity” - Matt Wright (!), David Wessel

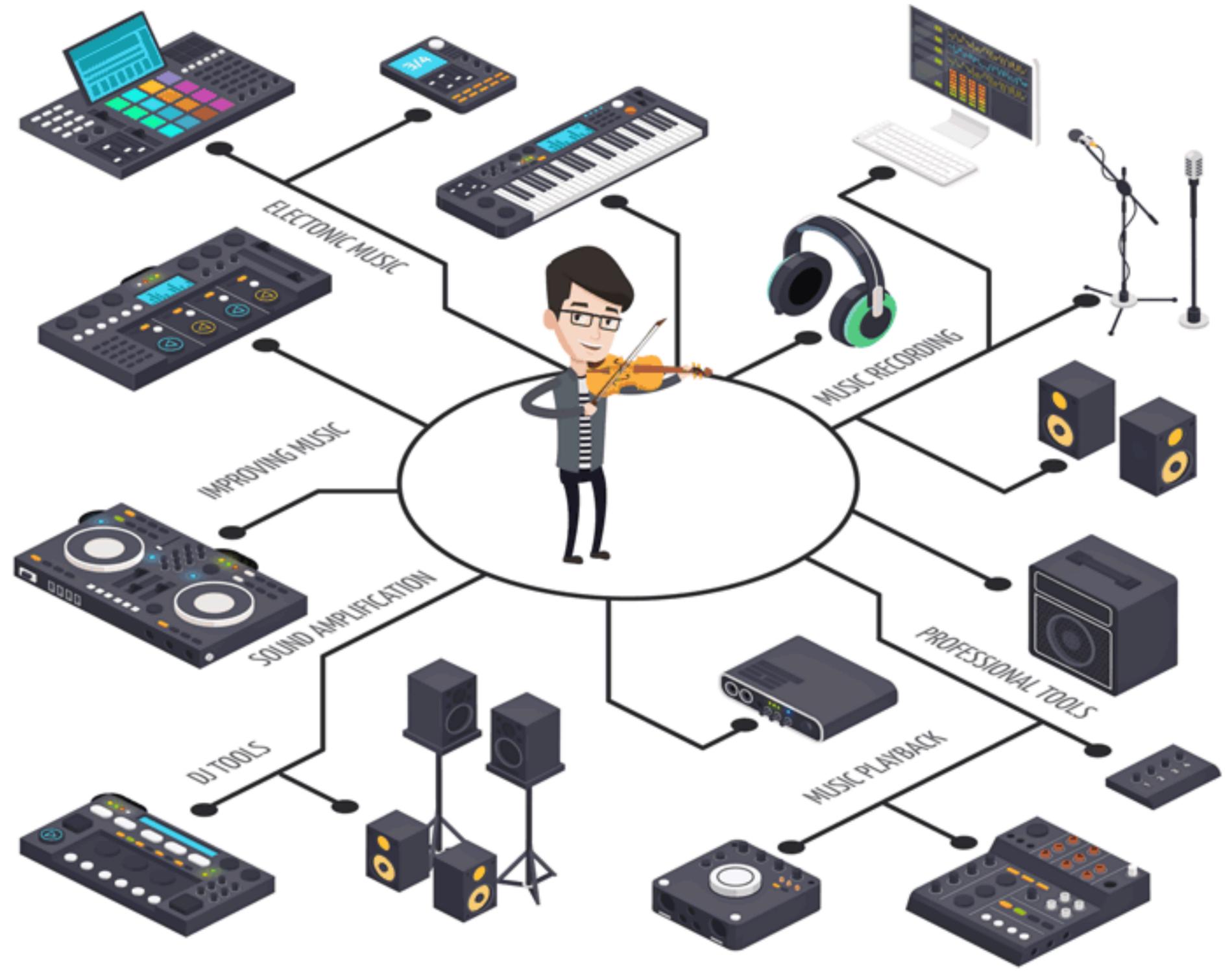
“Music now, subtlety later...” -Perry Cook

Leverage the technical and physical capabilities of users

Consider convenience (or not)

- Can you carry it to a gig? Can people afford it? Is it wired or wireless? How long does it take to power on or setup?





designing for ...accessibility

Easy to get in to, rewarding to grow with

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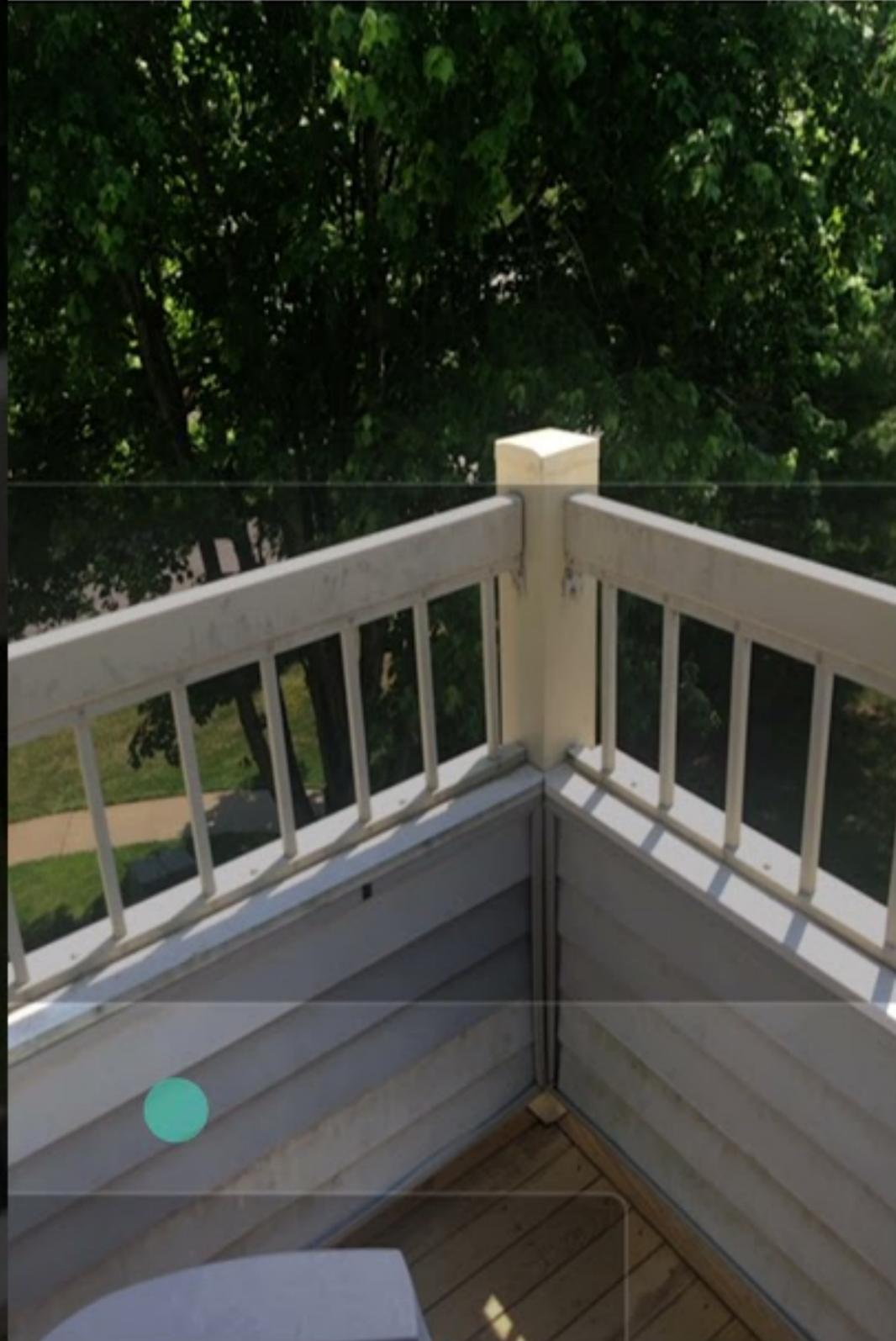
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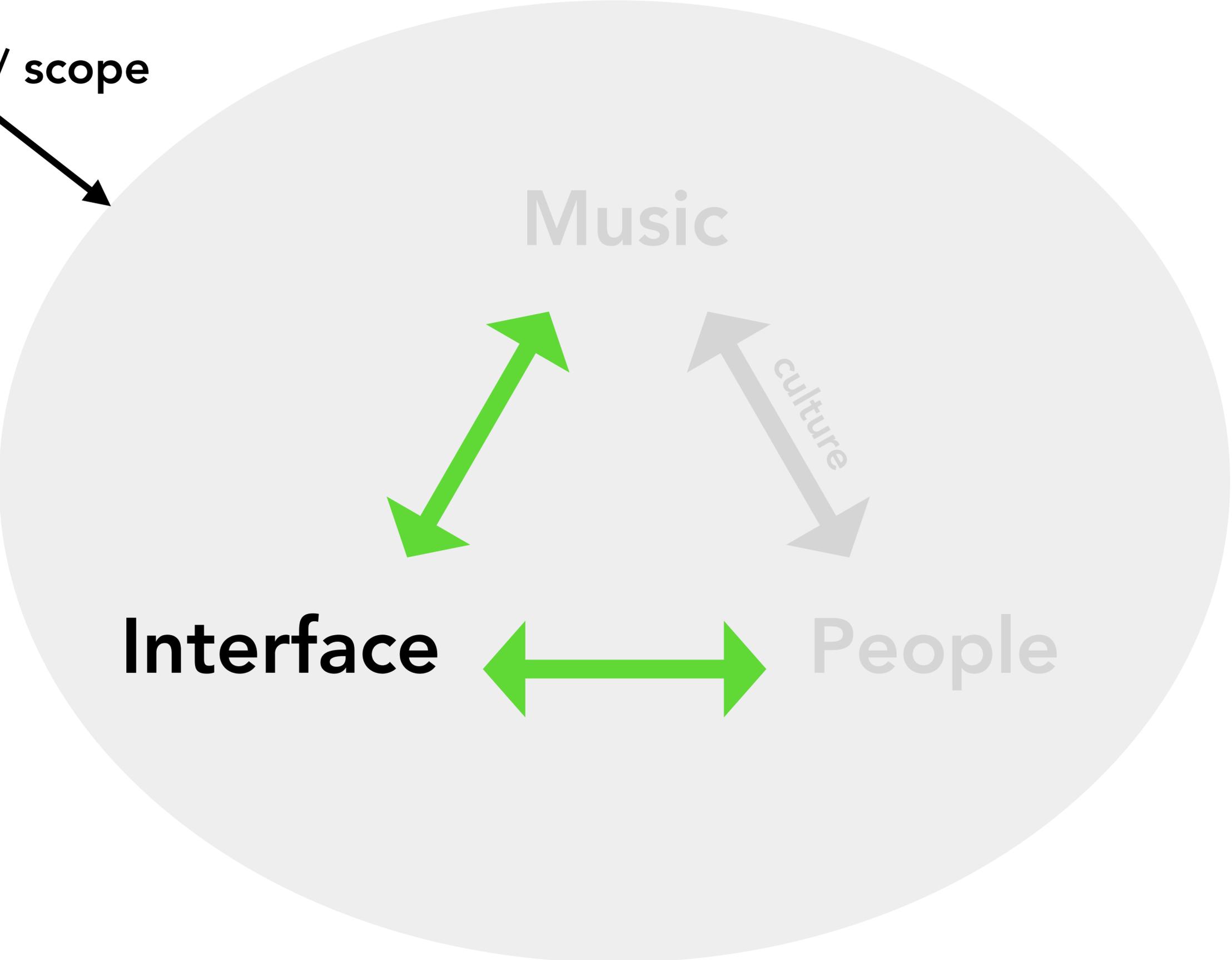
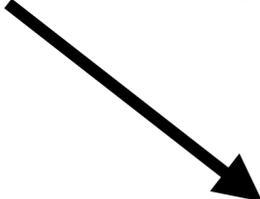
- Can you carry it to a gig? Can people afford it? Is it wired or wireless? How long does it take to power on or setup?

Consider human condition

- Factors like attention span, energy, willingness to engage



Context / scope



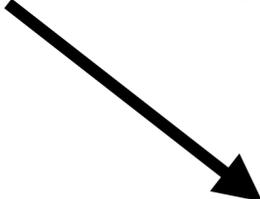
Music

Interface

People

culture

Context / scope



Sounds

i like



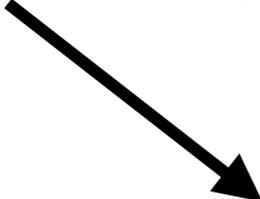
Interface



Me



Context / scope



Your lived experience



Sounds

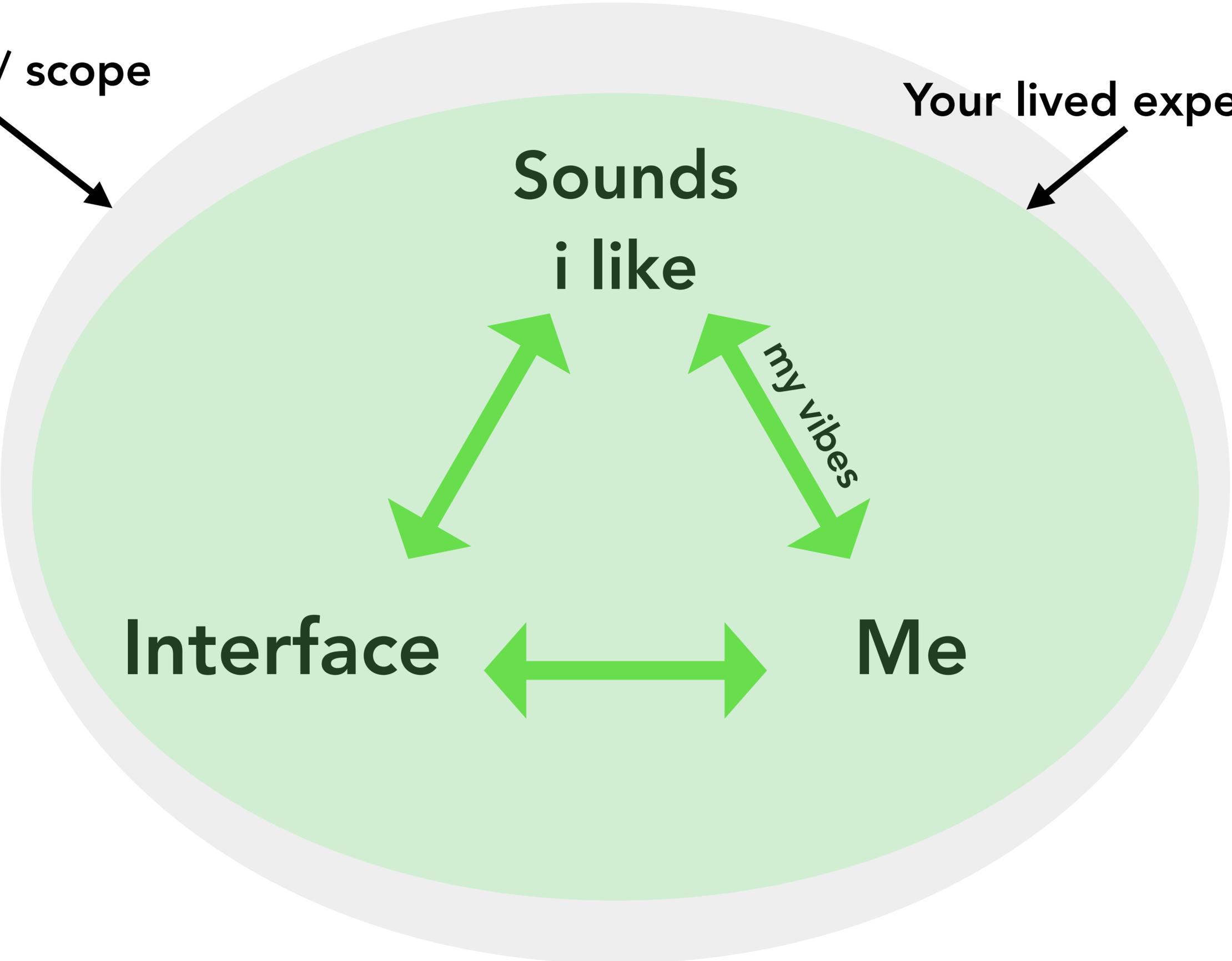
i like



Interface



Me





“Make a piece, not an instrument or controller” -Perry Cook

Make music, not an instrument or controller

Express yourself, then make tools

