

# PCGG. Final Presentation

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# Portfolio / mountains

Conference Paper

PDF Available

## Evolution of L-systems for compact virtual landscape generation.

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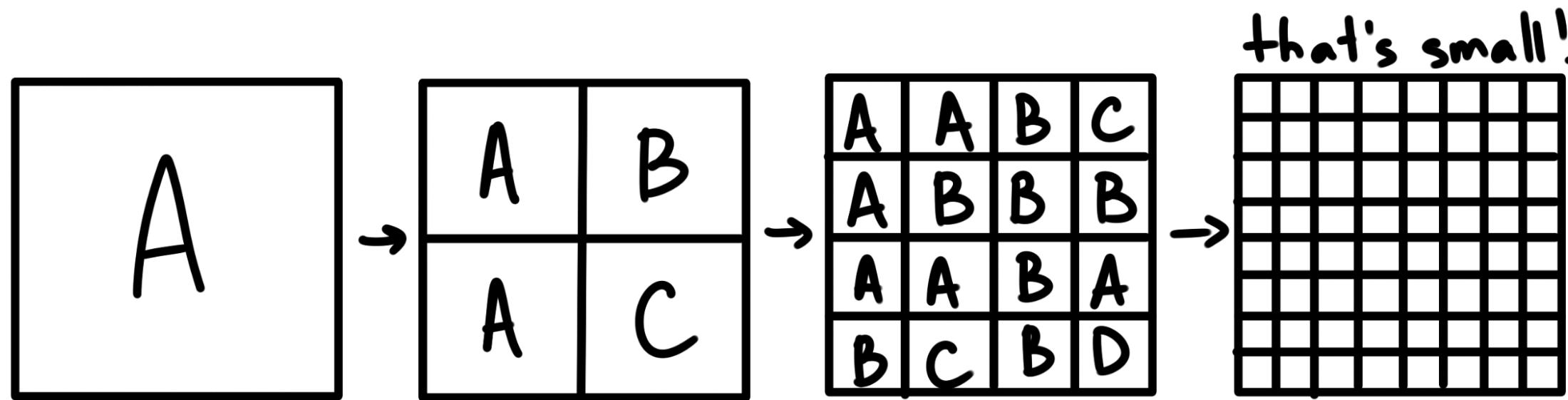
# What are LSystems?

An L-system is a type of formal grammar. An L-system consists of:

- an alphabet of symbols
- macros
- an initial string of symbols - axiom - from which to begin construction
- a mechanism for translating generated strings into geometric structures



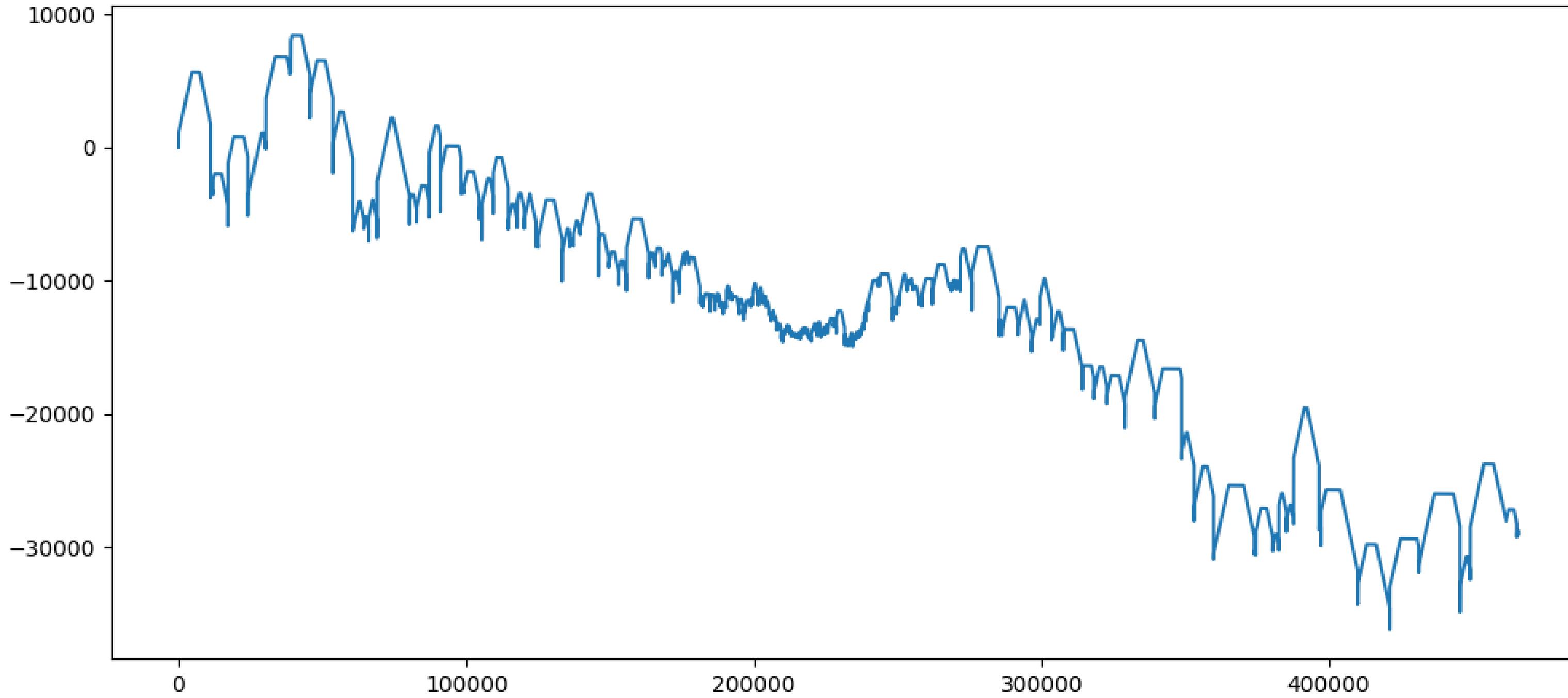
# L-System for 3D



TYPE:  
HILL

	A	B	C	D	E
+4 = A	.1	.075	.3	.2	.2
+2 = B	.275	.2	.1	.1	.4
0 = C	.35	.45	.3	.3	.35
-2 = D	.275	.2	.1	.1	.05
-4 = E	.1	.075	.2	.1	.0

# My midterm results



And now!

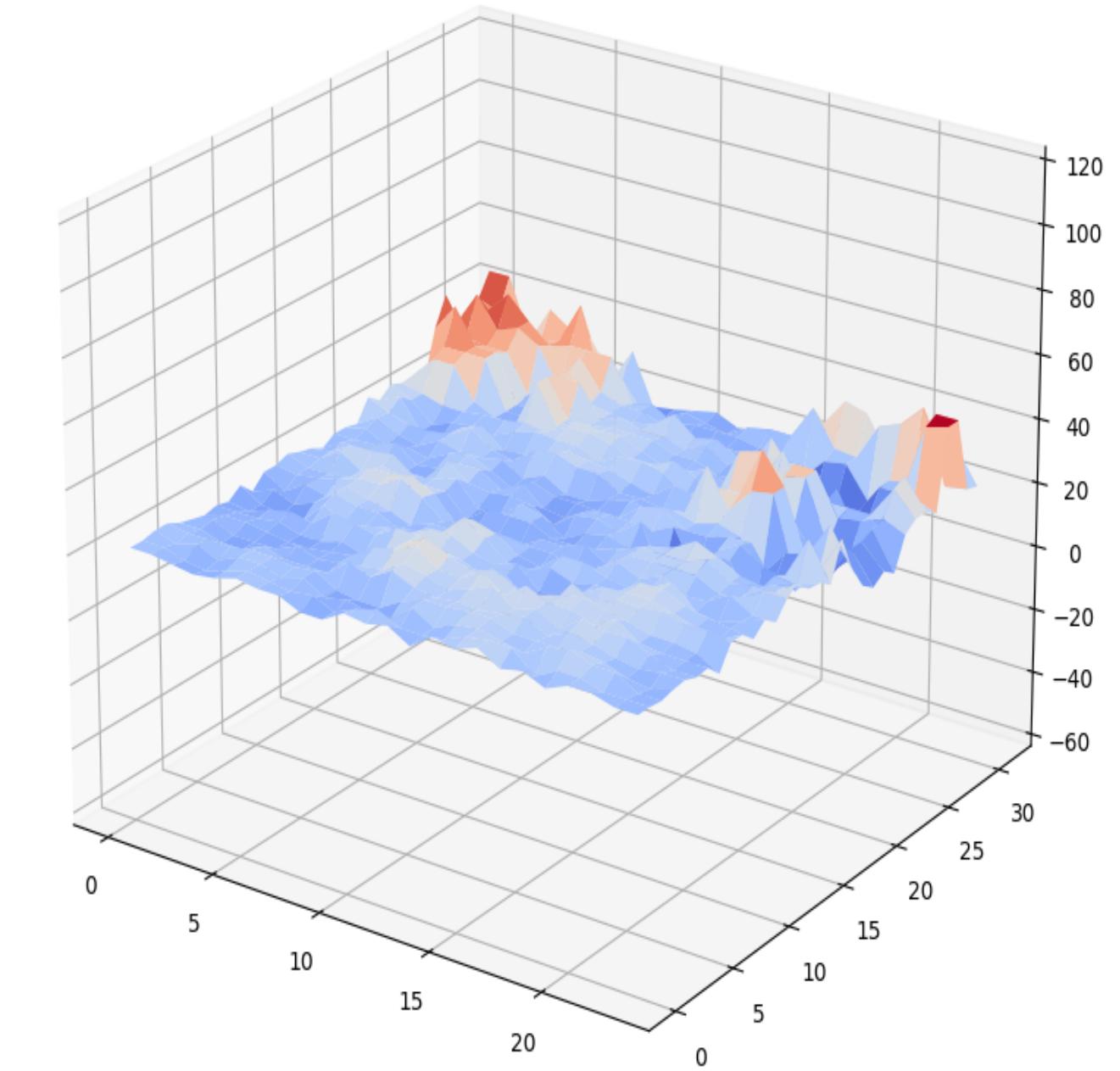
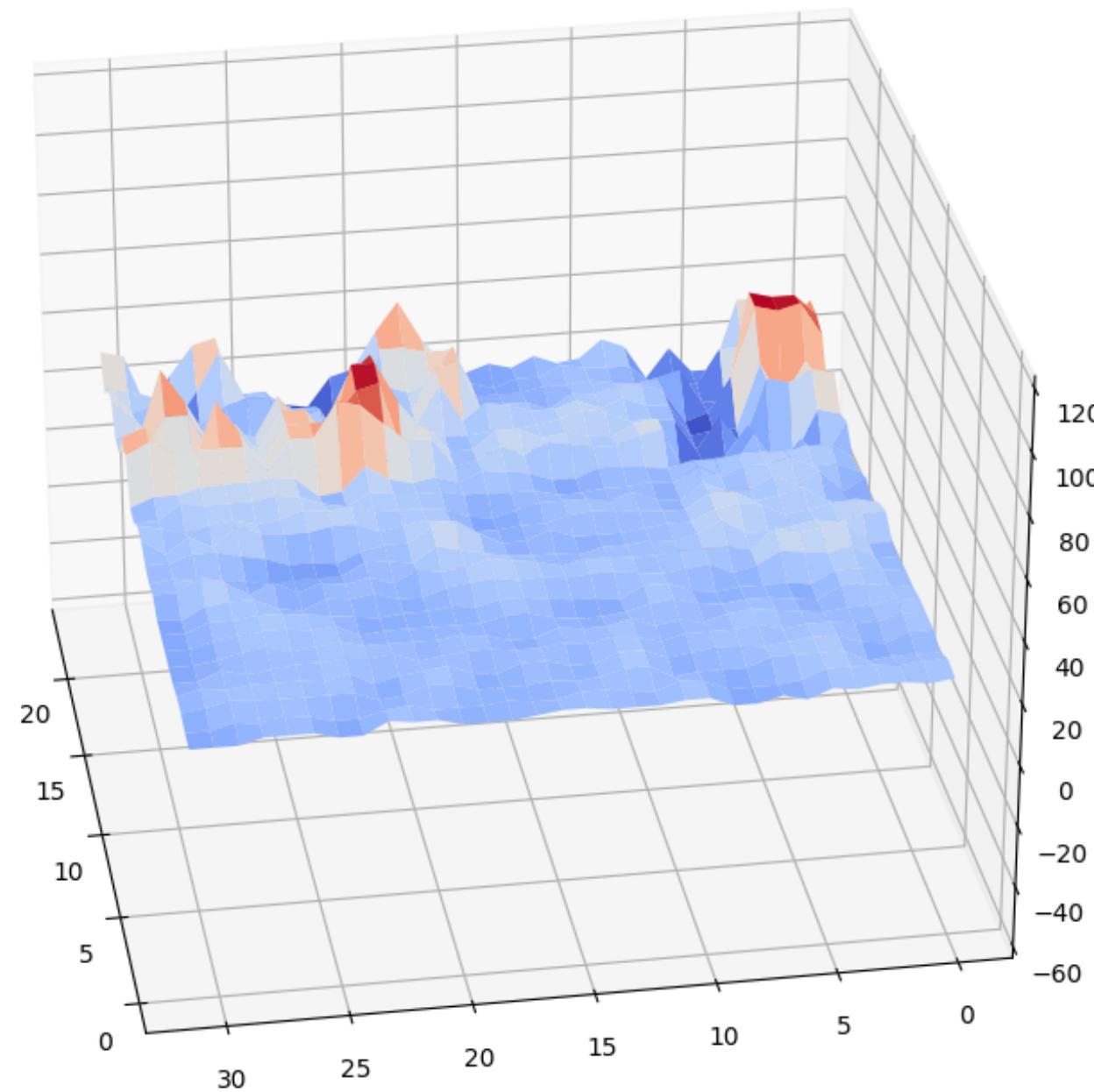


Type: Calm 16x16

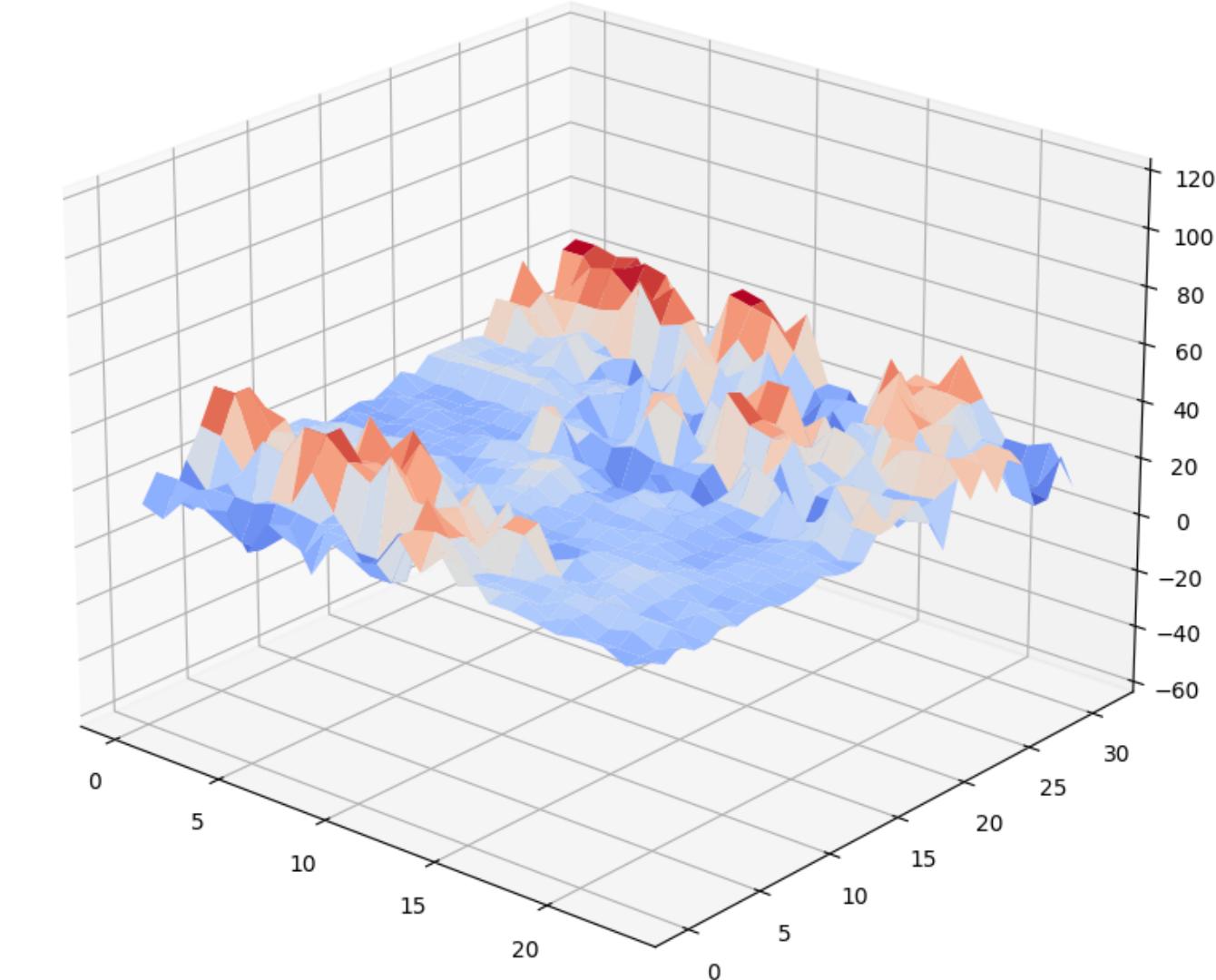
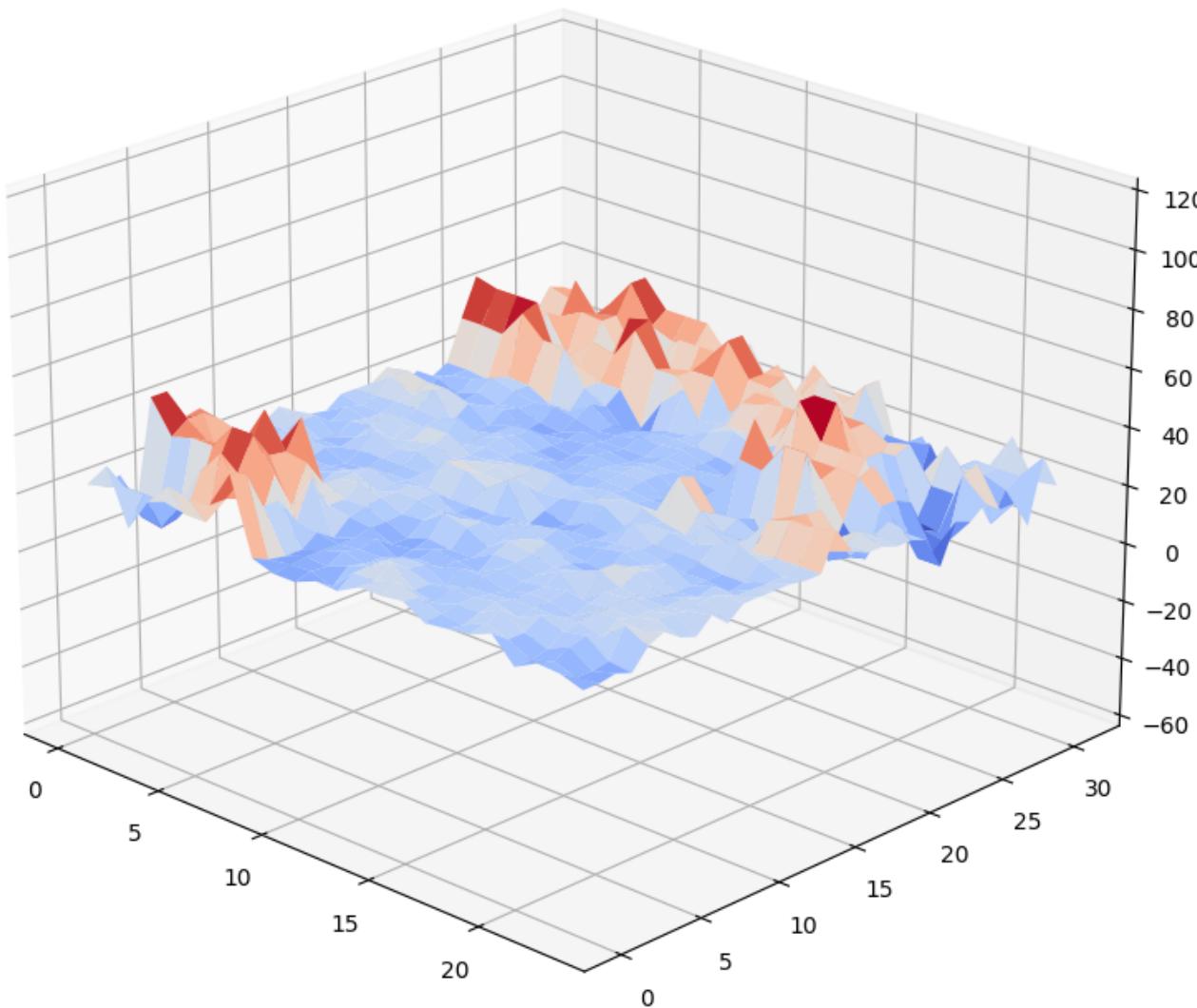
Type: Hill 16x16

Type: Steep 16x16

# Several connected tiles (4x4 field, 8x8 tiles)



# Several connected tiles (4x4 field, 8x8 tiles)



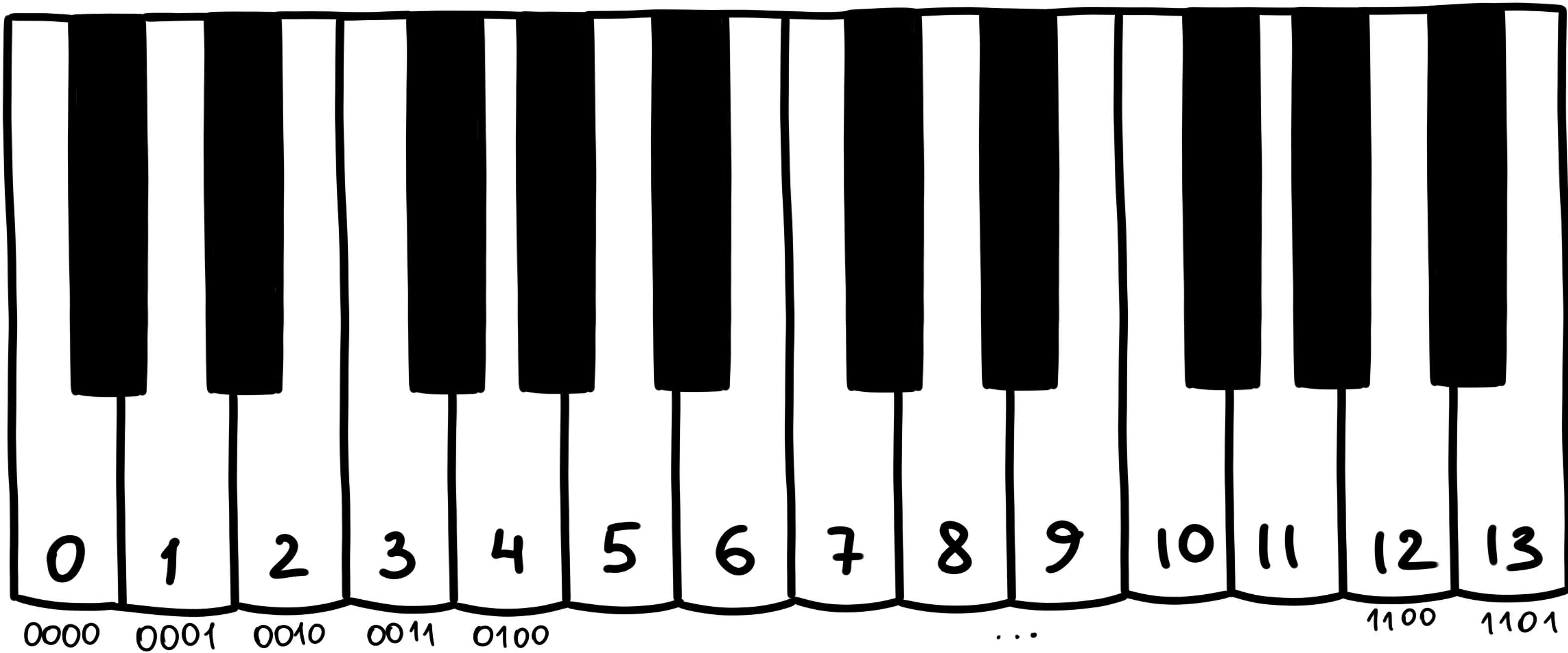
# Metrics

- tiles are connected with each other
- *calm* is flatter than *hill*
- *hill* is flatter than *steep*
- the fact that there are square tiles is not so obvious

# Porfolio / Music

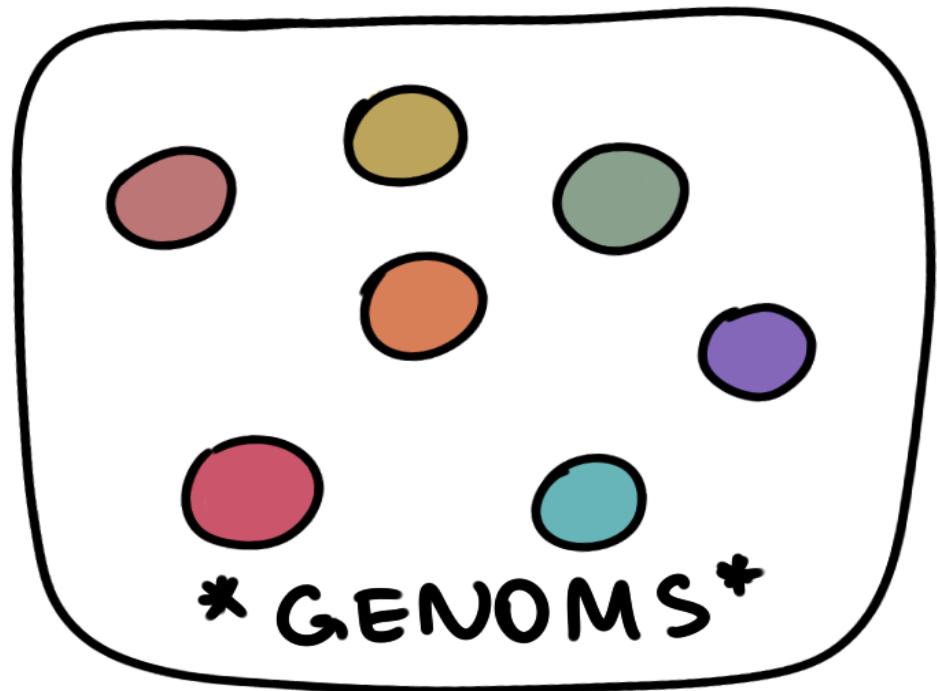




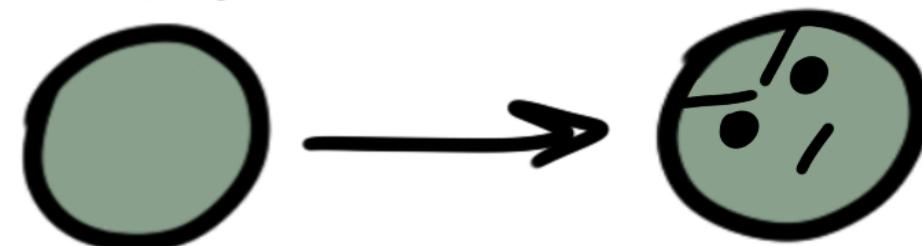


1 note = 4 bits

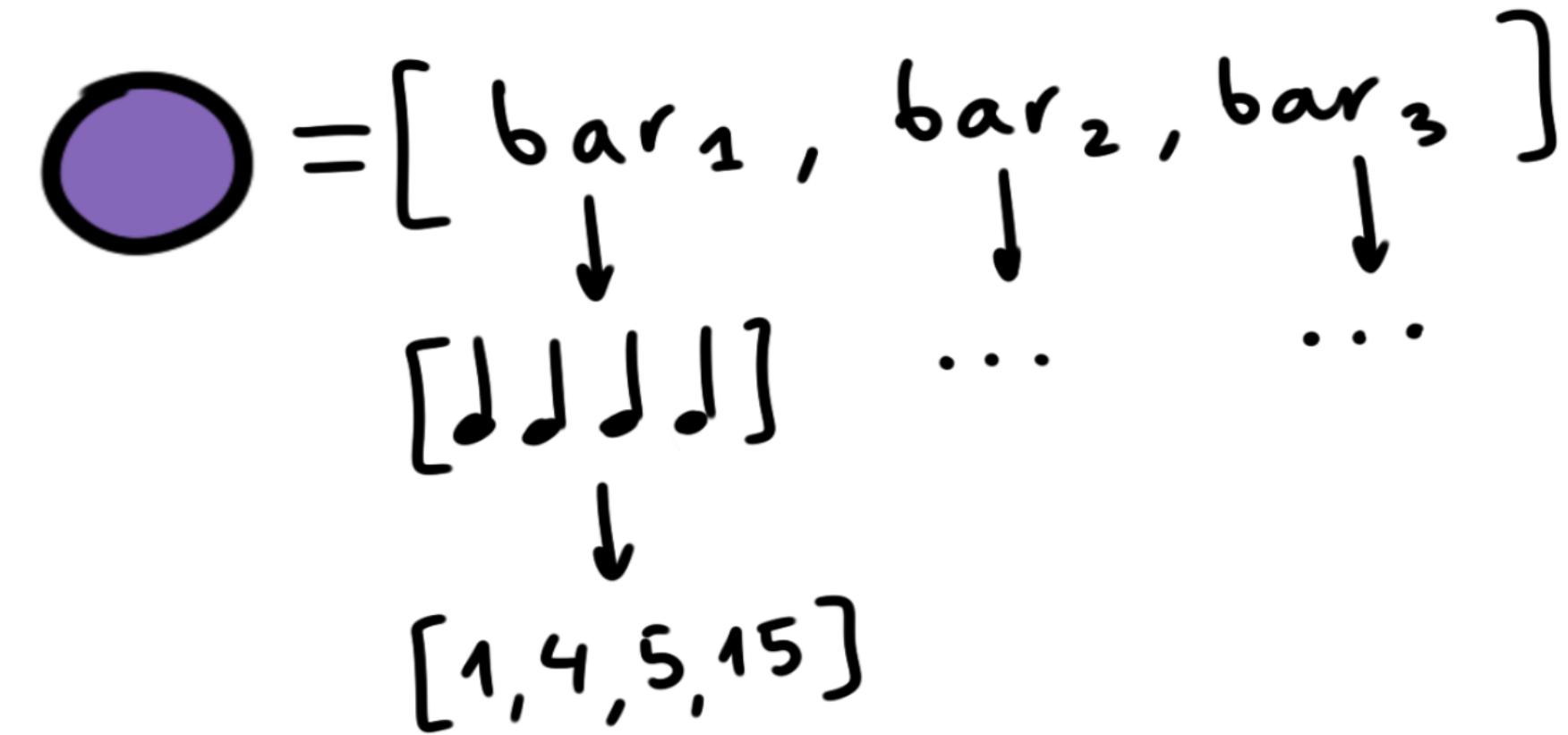
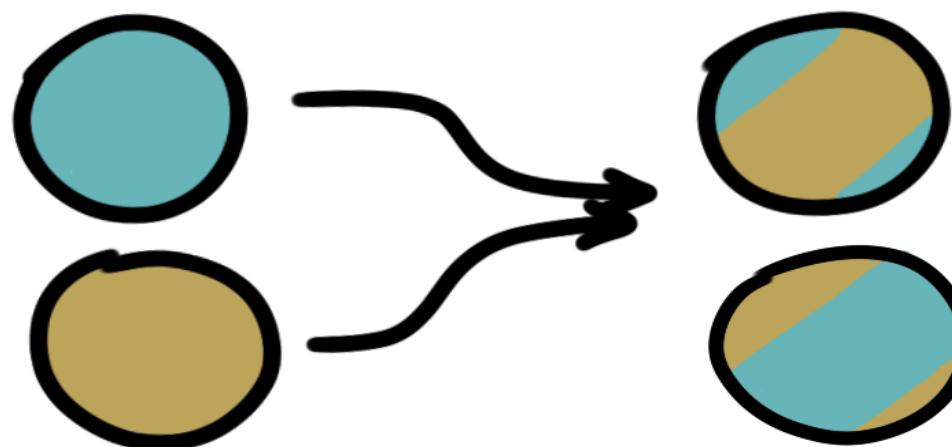
## POPULATION



## MUTATION



## CROSSOVER



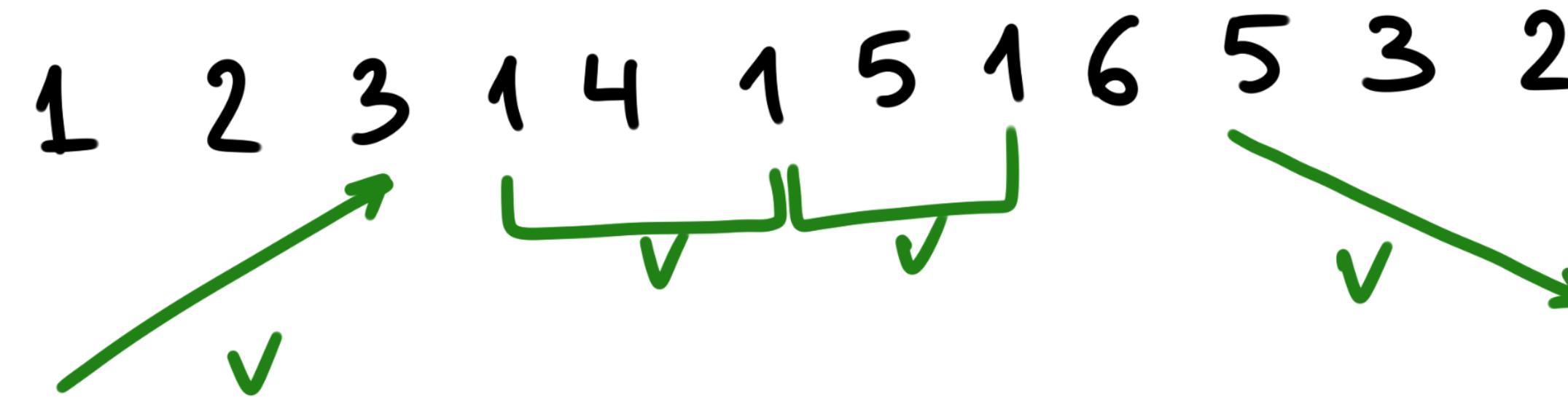
$$[1, \underline{4}, 5, 15] \rightarrow [1, \underline{15}, 5, 15]$$

$$\begin{array}{c} [1, \underline{4}, 5, \underline{15}] \\ \swarrow \quad \searrow \\ [1, \underline{2}, 0, \underline{13}] \end{array} \rightarrow \begin{array}{c} [1, \underline{4}, 5, \underline{13}] \\ \swarrow \quad \searrow \\ [1, 2, 0, 15] \end{array}$$

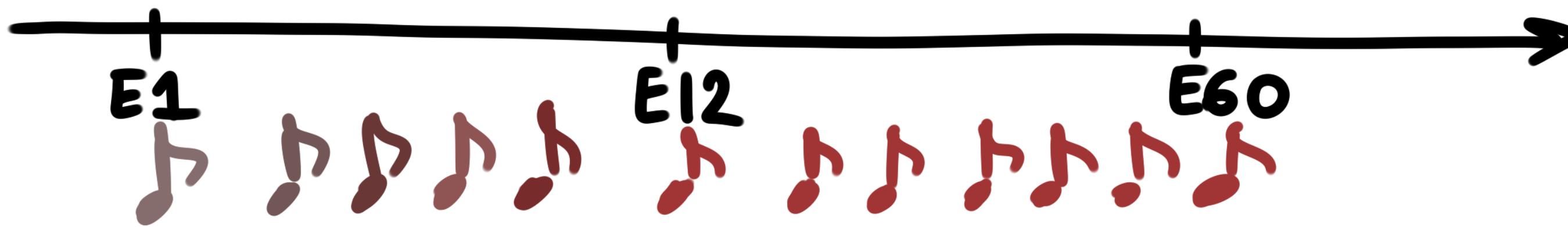
**FITNESS  
FUNCTION**



FITNESS:



REALITY

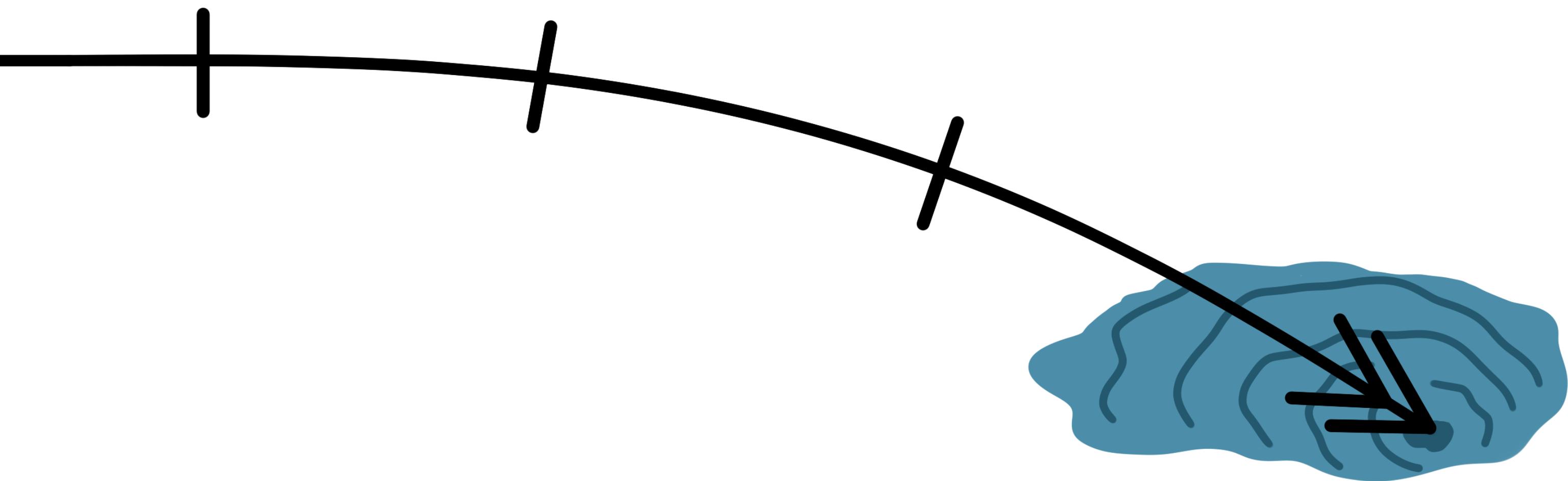


# The problem: it doesn't evolve

```
88000 [66, 66, 66, 66, 66, 66, 66, 66, 63, 35, 34, 27, 3, -4, -11, -16, -17]  
89000 [66, 66, 66, 66, 66, 66, 66, 66, 35, 33, 32, 28, -4, -16, -17, -18, -24]  
90000 [66, 66, 66, 66, 66, 66, 66, 66, 46, 27, 26, 2, -5, -11, -16, -17]  
91000 [66, 66, 66, 66, 66, 66, 66, 66, 42, 30, 19, 18, -11, -12, -12, -23, -24]  
92000 [66, 66, 66, 66, 66, 66, 66, 66, 40, 38, 21, 3, -3, -4, -16, -17]  
93000 [66, 66, 66, 66, 66, 66, 66, 66, 48, 30, 23, 20, 3, -9, -16, -18, -23]
```

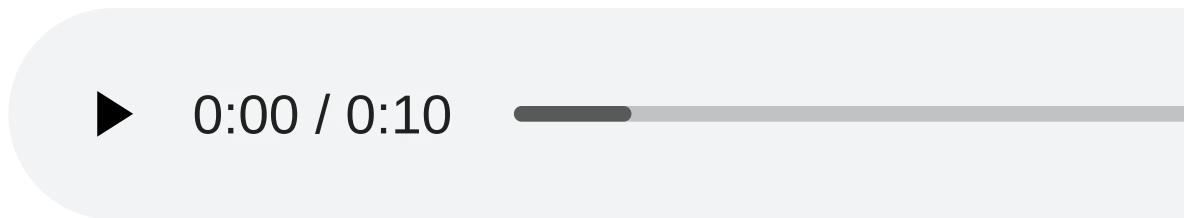
# My question from the midterm: What is next?

1. try to actually go through several populations
2. friendly user-interface
3. introduce chords
4. get the final melody a melody

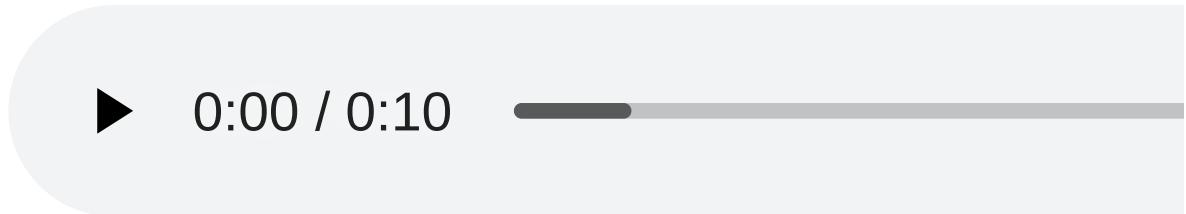


# Initial VS Last Epoch

Generation 0



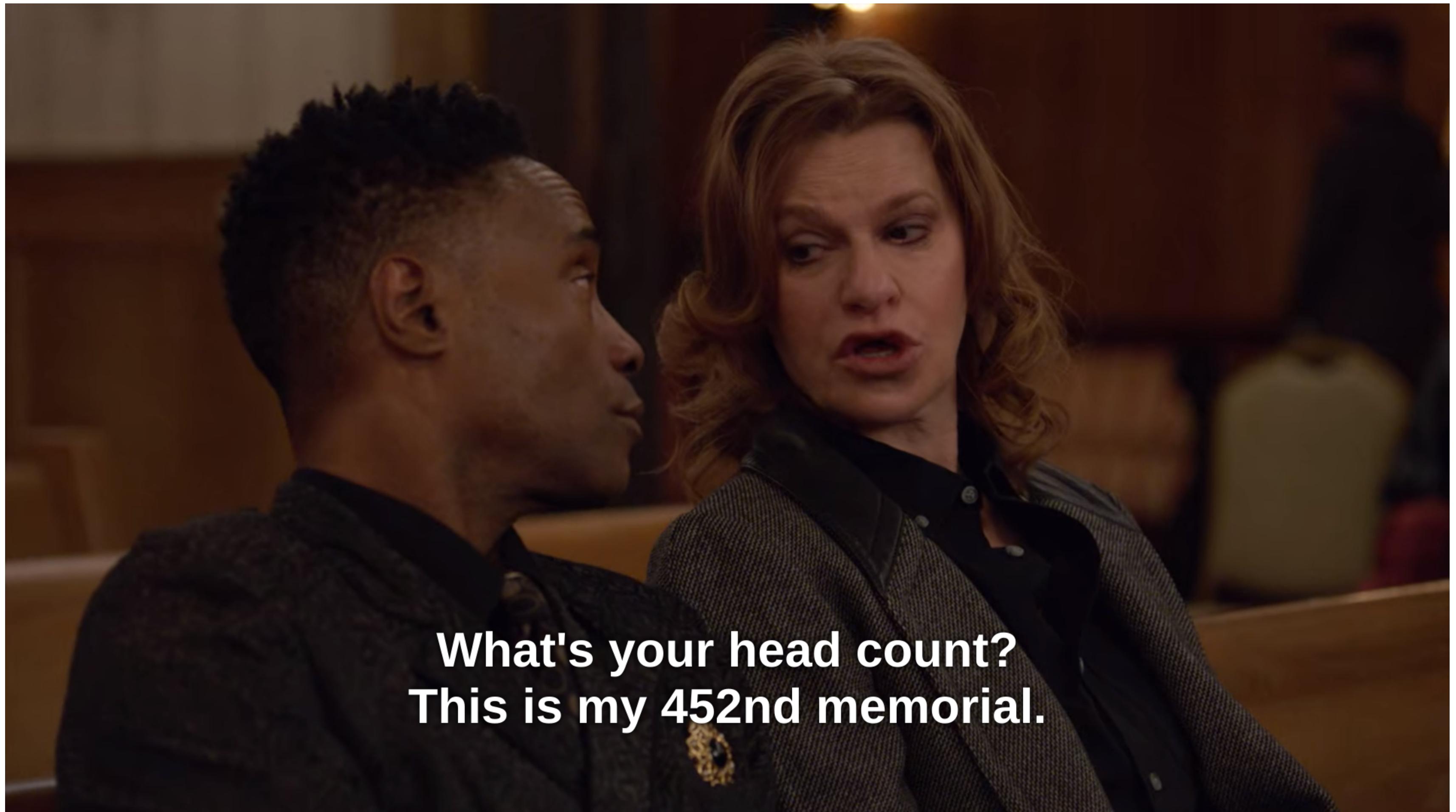
16 notes per bar, 2 bars, 4 bits per note, 15 initial genomes, 100k epochs



# Metrics

- repeatedness of a melody
- going up at the beginning, going down at the end

# THE PROJECT



What's your head count?  
This is my 452nd memorial.



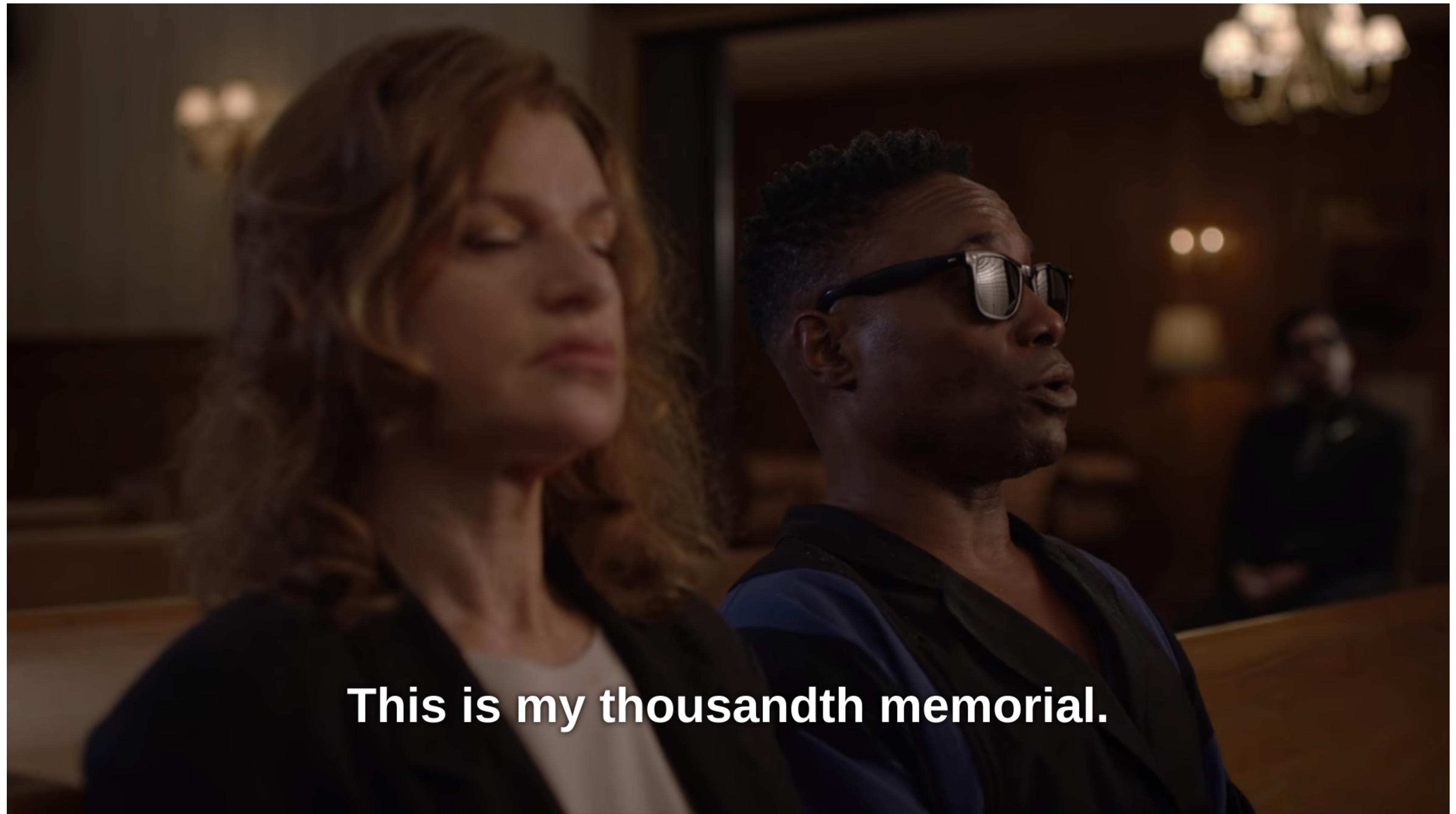
Two hundred and ten.



**First one to get to a thousand  
gets a free toaster.**



A FEW  
MOMENTS LATER



This is my thousandth memorial.



I was picking up my toaster.







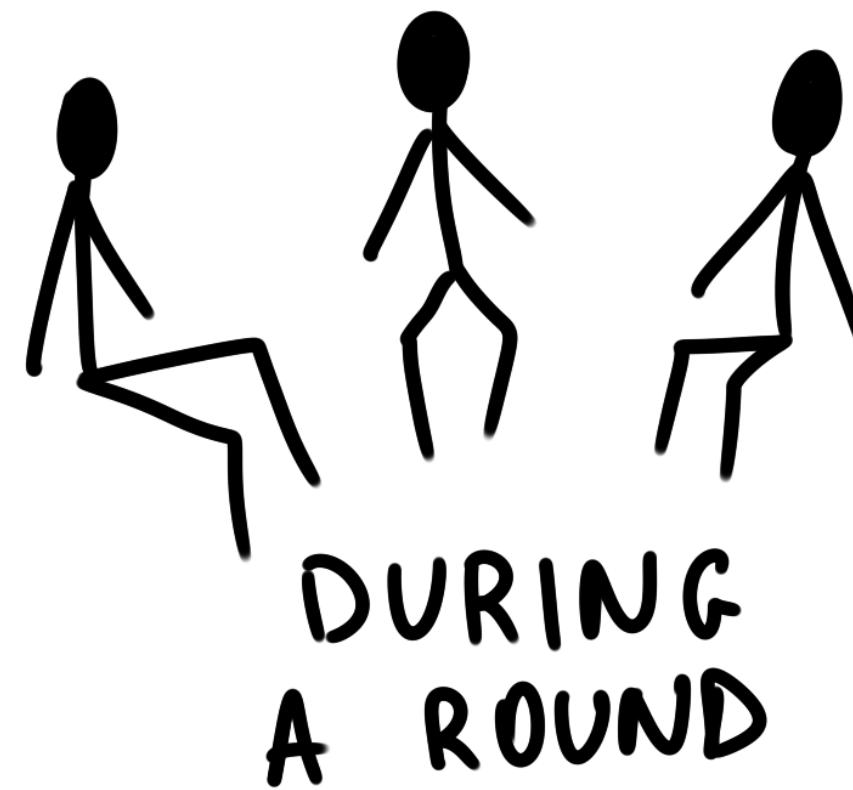
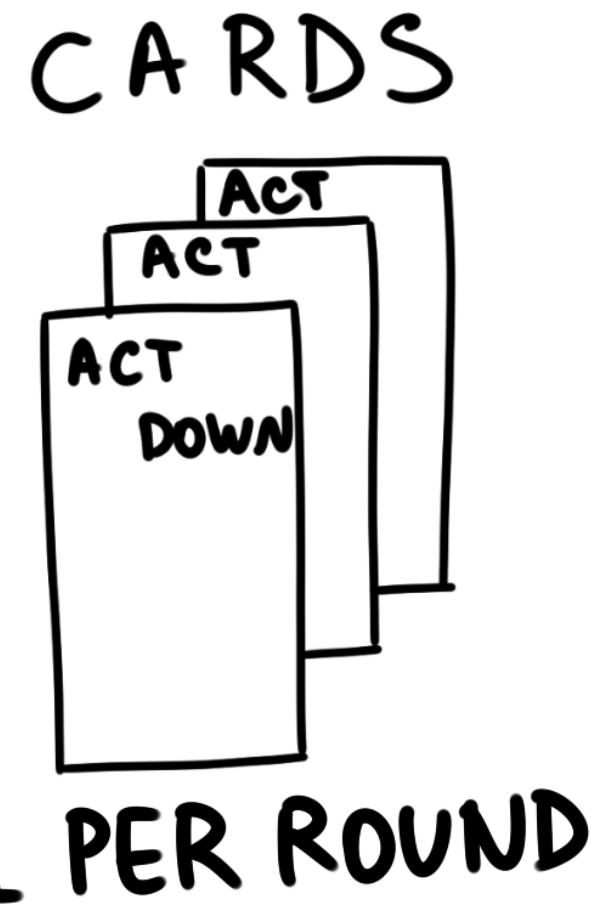




So, the game...



	STATUS	# OF PPL
RICH PPL	 A horizontal bar divided into two equal black segments by a white center. A red bracket below it spans the width of the bar.	 A horizontal bar divided into two equal black segments by a white center. The top segment is labeled "max#".
ACT UP	 A horizontal bar divided into two equal black segments by a white center. A red bracket below it spans the width of the bar.	 A horizontal bar divided into two equal black segments by a white center.
T-COMMUNITY	 A horizontal bar divided into two equal black segments by a white center. A red bracket below it spans the width of the bar.	 A horizontal bar divided into two equal black segments by a white center.
GOVERNMENT	 A horizontal bar divided into two equal black segments by a white center. A red bracket below it spans the width of the bar.	 A horizontal bar divided into two equal black segments by a white center.
MEDIA	 A horizontal bar divided into two equal black segments by a white center. A red bracket below it spans the width of the bar.	 A horizontal bar divided into two equal black segments by a white center.



# Dice

- rolled once every 2-4 rounds (an adjustable rule)
- can be rolled more often for gay people and less often for non-gay people

# Discussion

- each group is given a limited time for a discussion
- one group can speak only once during a round (an adjustable rule)
- if an action card is targeted at a particular group, other groups can still react

# Game Master or Mistress

They can

- change the dice rule but not remove it completely
- choose a set of cards to play
- configure the initial status bars
- limit discussion time

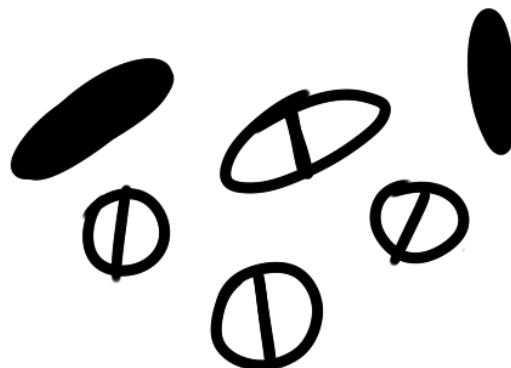
They must

- resolve arguments
- update the status bars and number of people per group bars

# Cards

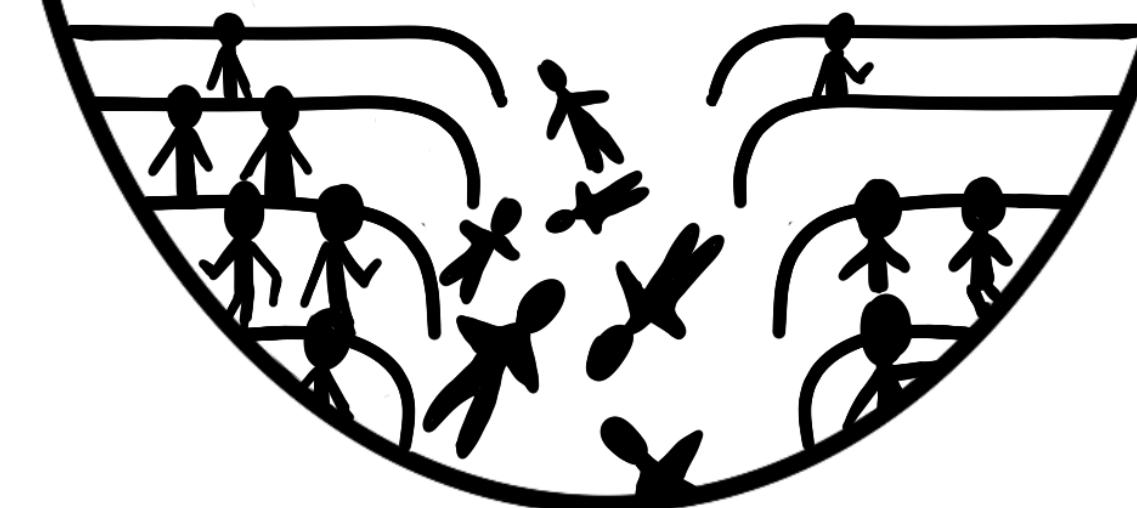
A2T  
RELEASE  
10.000 \$

1987



STOP  
THE  
CHURCH

1989



"Vogue"  
by Madonna  
1990 ♥



# Other possible cards

1. New gay bar opened! Nevertheless, they do not let HIV-positive and transgender people in.

- ACT UP can choose to protest or let it be
- T-Community can stand up for themselves or choose not to
- Journalists can choose to write about it or not

2. Cosmopolitan magazine published an interview with a doctor and claims that women cannot get HIV.

- Women from ACT UP and outside of ACT UP can choose to protest or let it be

3. ACT UP is running out of money, they need to organize a fund raising

- ACT UP can organize a fund raising event
- Rich people can choose to support them or not

# Other possible cards

4. Police came to the ball and arrested some people
  - T-Community can try and raise money to bail them out
5. Government decided to bury first HIV-positive on Hard Island under seven feet of dirt instead of usual three.

# Hm, who wins?

Whoever doesn't die or has the highest score by the end of the game

# Metrics

- it's history-based
- simulation of dying
- at least one of you got interested