The structure of musical tones

-a hierarchical format:

-not all frequencies are used.

A subset of them is chosen, based on a tuning system

-not all possible notes in a tuning system are used to write songs either

-a subset of notes from the tuning system is selected to write the song (scale set, based on a key-note, or just key)

-two basic kinds of scales exist as well, called the “mode”

Tuning Systems

-many types, all have in common the idea of an octave

-based on this notion of octave equivalence, we only need to discuss what frequencies will become musical notes within a single octave

-side note: octave doubling doesn't necessarily mean any note can substitute for any other note of the same name

-e.g. octave scrambled melodies

-however, lack of recognition might be due to another 'scrambled' factor: the contour of the melody. When preserved:

Tuning Systems

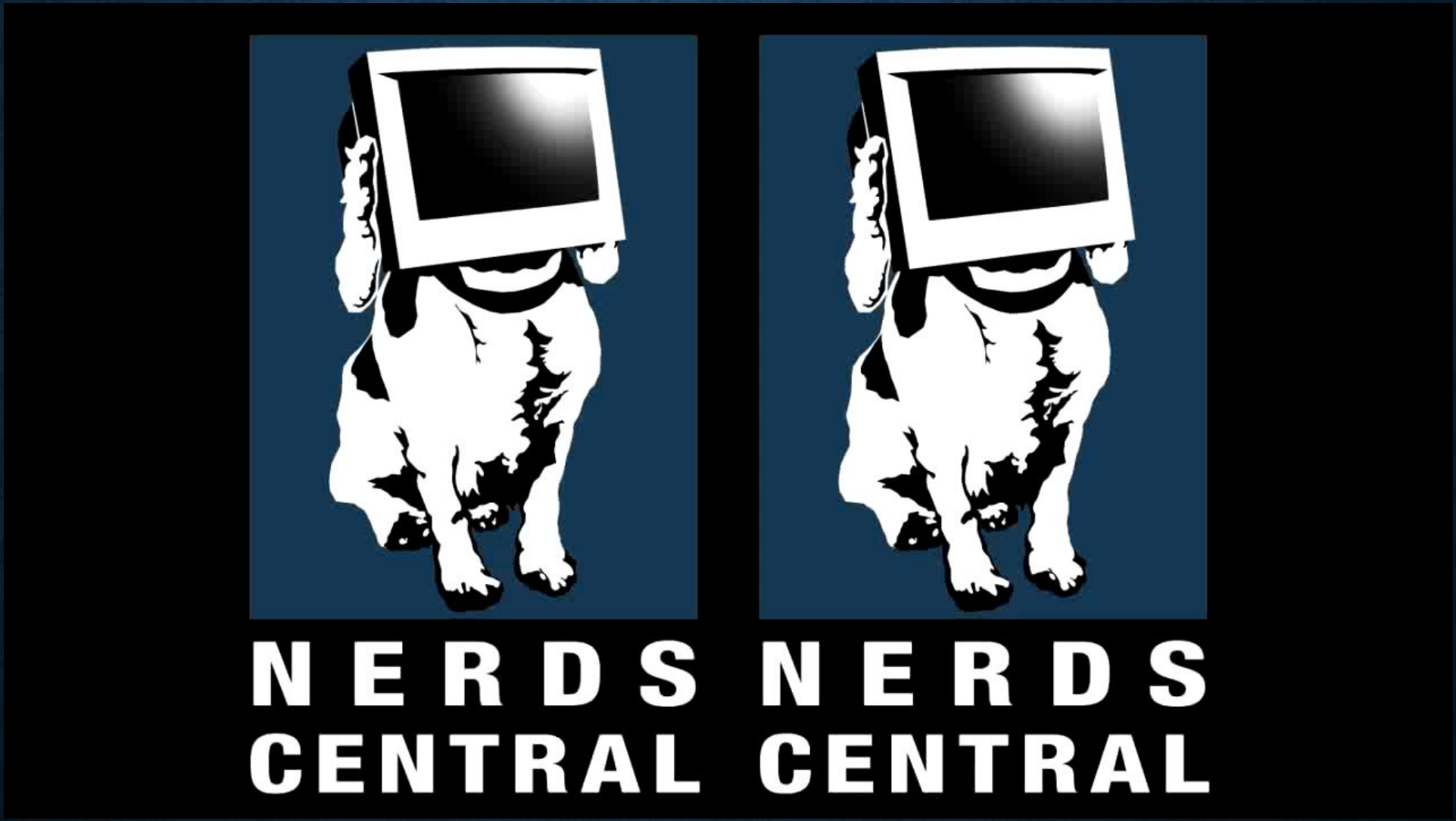
-early tuning system: just intonation

-divides up the notes within an octave with increasingly complex frequency ratios
Octave = 2:1 ratio
Perfect 5th = 3:2 ratio
Perfect 4th = 4:3 ratio
Etc.

Gives rise to what sounds like our tuning system today, despite minor differences in the actual frequencies used.

The main limitation of this system: must always play music in the "same key". Cannot transpose or it will sound out of tune.

Tuning Systems



Tuning Systems

Equal temperament: divides octave into 12 logarithmically equal steps, so any two adjacent notes are always in a 1.0594:1 ratio

Allows for transposition, so you can play a song in any key and it will still sound like that song, just starting on a different note (the key of the song).

Scale sets

Written music doesn't typically make use of all the available notes in an octave.

That is called the chromatic scale:

Most music in the last 100 years or so makes use of further subsets of that scale.

The one that has come to dominate modern music: the diatonic scale
("Doe a Deer" from The Sound of Music)

There are twelve possible diatonic scales, one for each possible starting note (called a key)

Scale sets

Within a scale set, you can also vary the "mode" to be either major or minor

This is mostly dependent on the identity of the 3rd and 6th notes of the scale being flattened or not

C-major scale:

C-minor scale:

Mode greatly affects the ‘mood’ of a piece

Major mode

Minor mode

MUSICOLOGICAL VIEWPOINT: STRUCTURAL COMMONALITIES

1. Propinquity

Nursery rhymes

sml/lrg intervals

2. Repetition

Blue danube

Bach Fugue

root triad

3. Finality

PSYCHOLOGICAL VIEWPOINT: DATA-DRIVEN CONCLUSIONS

I. Testing musicological predictions:

a. Melody hunting: Farnsworth (1938)

b. Gap-fills: Rosner & Meyer (1986)

PSYCHOLOGICAL VIEWPOINT: DATA-DRIVEN CONCLUSIONS

I. Testing musicological predictions:

a. Melody hunting: Farnsworth (1938)

b. Gap-fills: Rosner & Meyer (1986)

II. Perception of structural characteristics

a. Contour

b. Interval

Hey jude - The Beatles

saxoparaeventos.blogspot.com
sheetsax.blogspot.com
pianoparaeventos.blogspot.com

Arreglos: Denis Bevilacqua