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Ear, Mind, or Brain?

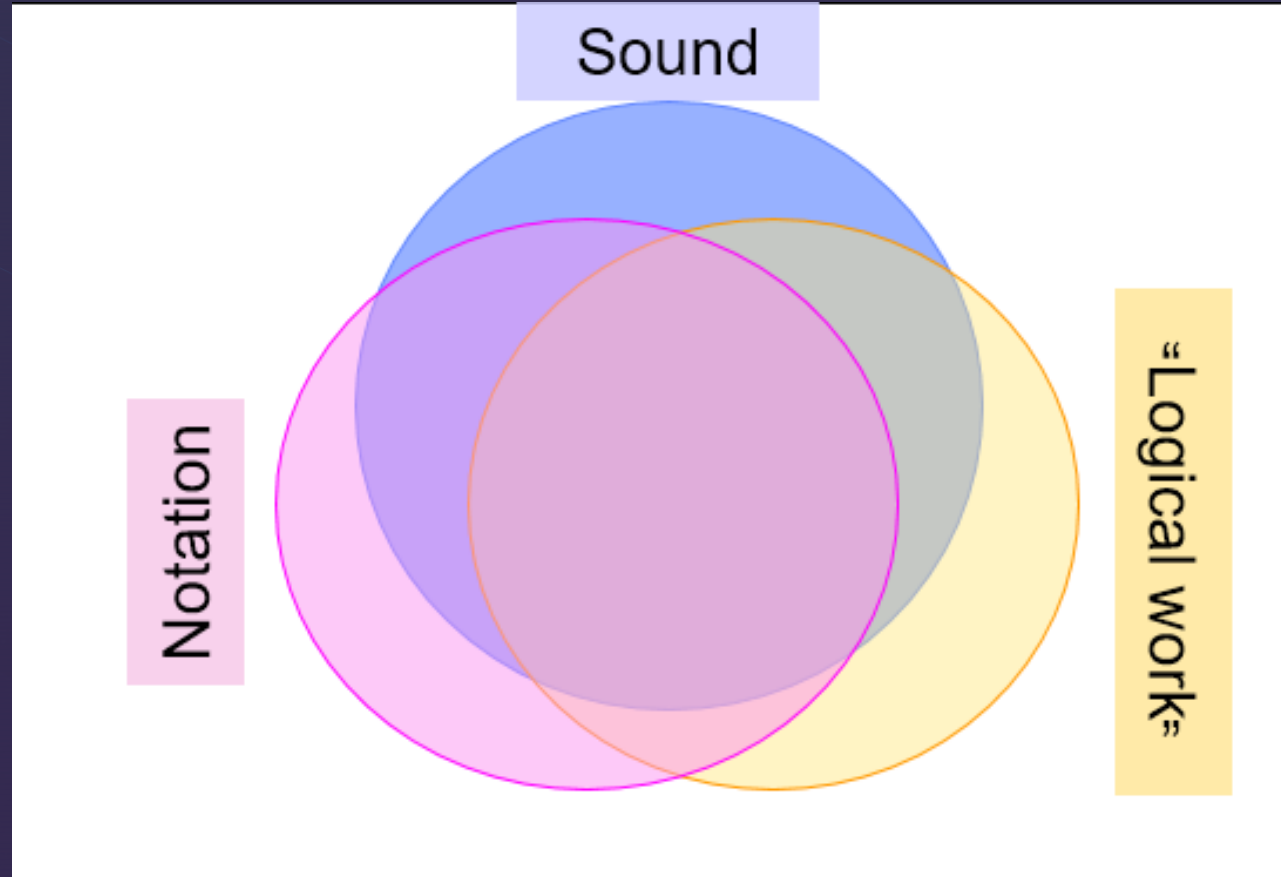
Reflections on Musical Similarity

Music as sound

Timbre

Tempo

Dynamics

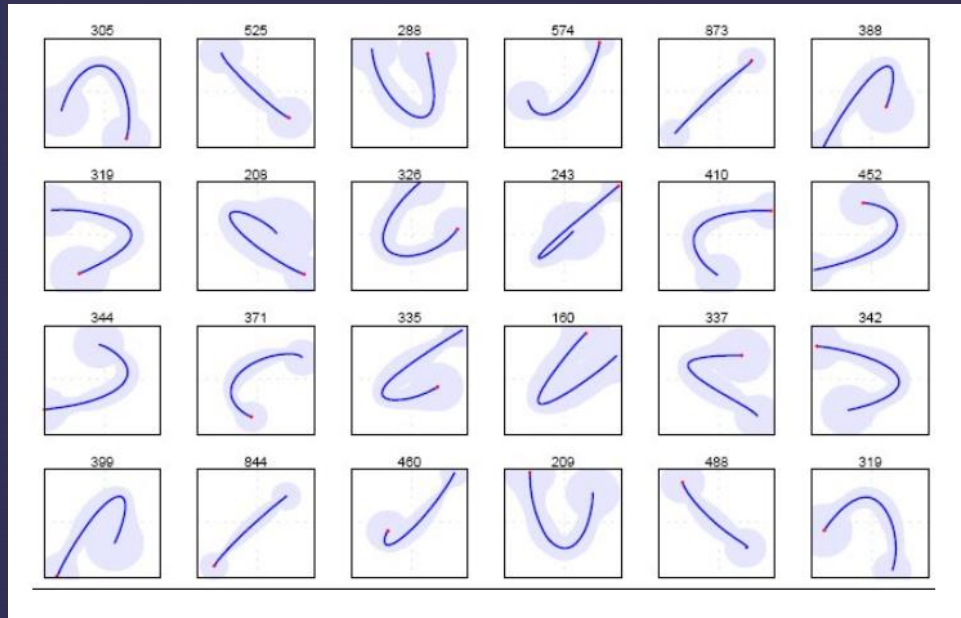


Human factors in assessments of similarity

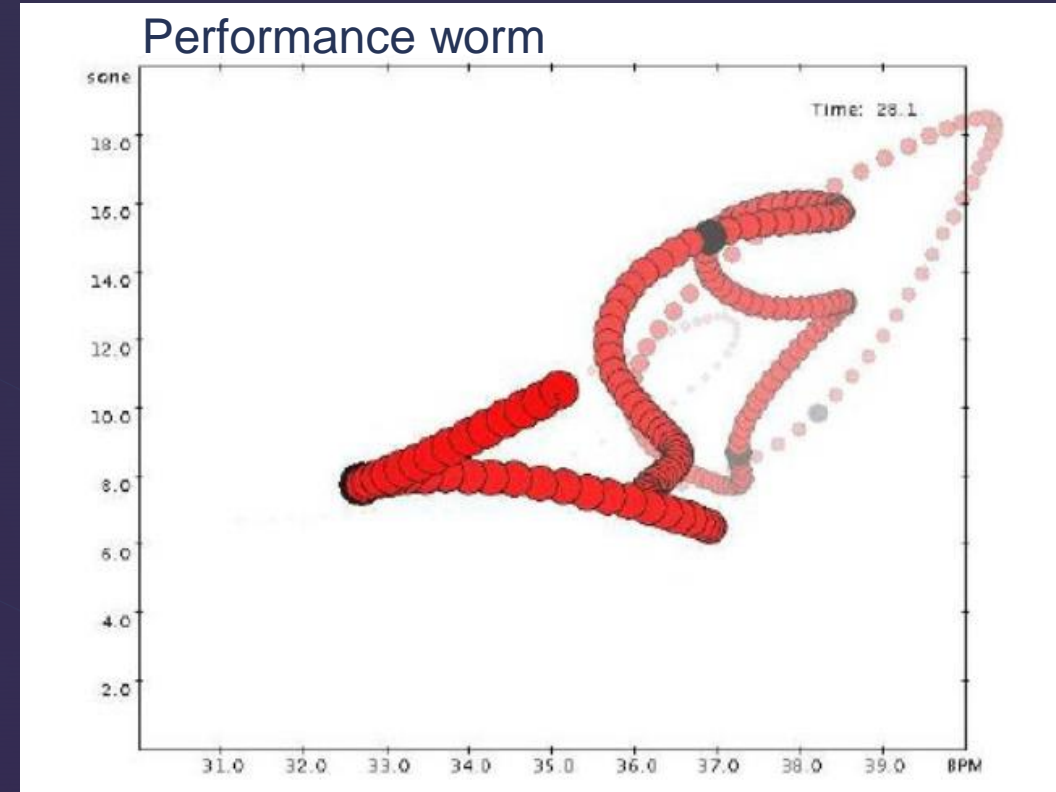
- **Artistic interpretations** in performance
- **Cognitive weights** of feature-based comparisons
- **Perceptual factors** in the experience of “similarity”
- **Cultural conditions**

What is music?

Cognitive aspects of musical similarity

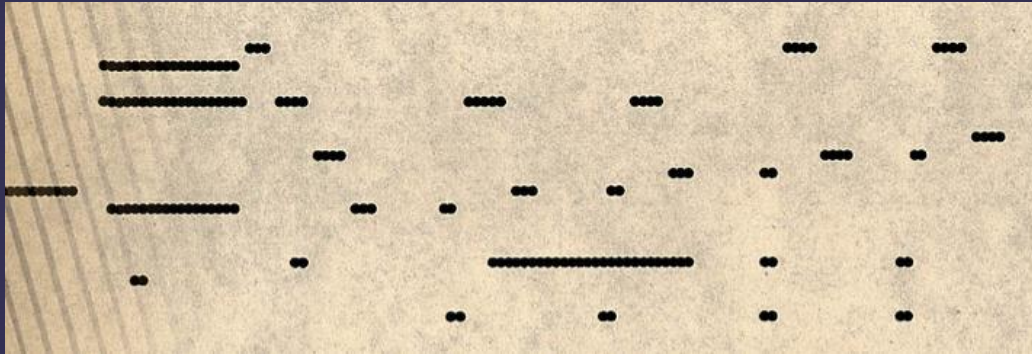


Beat-level tempo changes



Simon Dixon, Werner Goebel, Gerhard Widmer: Performance worms

Differences issue from several domains



Music as sound

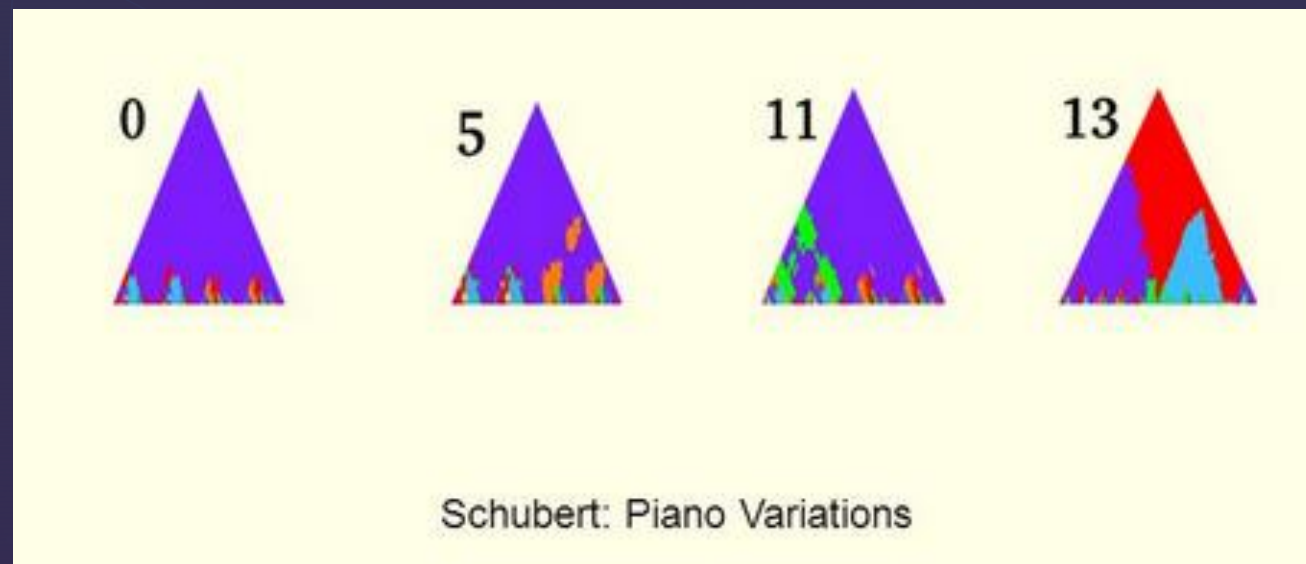
From SUPRA (Stanford U. Piano Roll Archive): supra.stanford.edu

Listening to performance differences (Pianola website)



“Five Foot Two”
Marg. Thomson, 1925
Superphone Label

Cognitive aspects of musical similarity



Craig Sapp: Notation-based extrapolation
of harmonic similarity

Social factors, cultural Interpretation

- ▶ Dance of Mantua (17th c.) as Dvorak's "Moldau" theme (19th c.)



- ▶ As "Hatikva" (Israeli national anthem)



- We shall overcome
- Morehouse College Glee Club 2009
- [arr. Wendell P. Whalum]



<https://www.youtube.com/watch?v=Aor6-DkzBJ0>

Cultural distance

O Sanctissima (Latin hymn,
18th century)



Coro Città di Castellarano, dir.
Marco Giudorizzi, 2017

<https://www.youtube.com/watch?v=SGFcce-NfQ8>

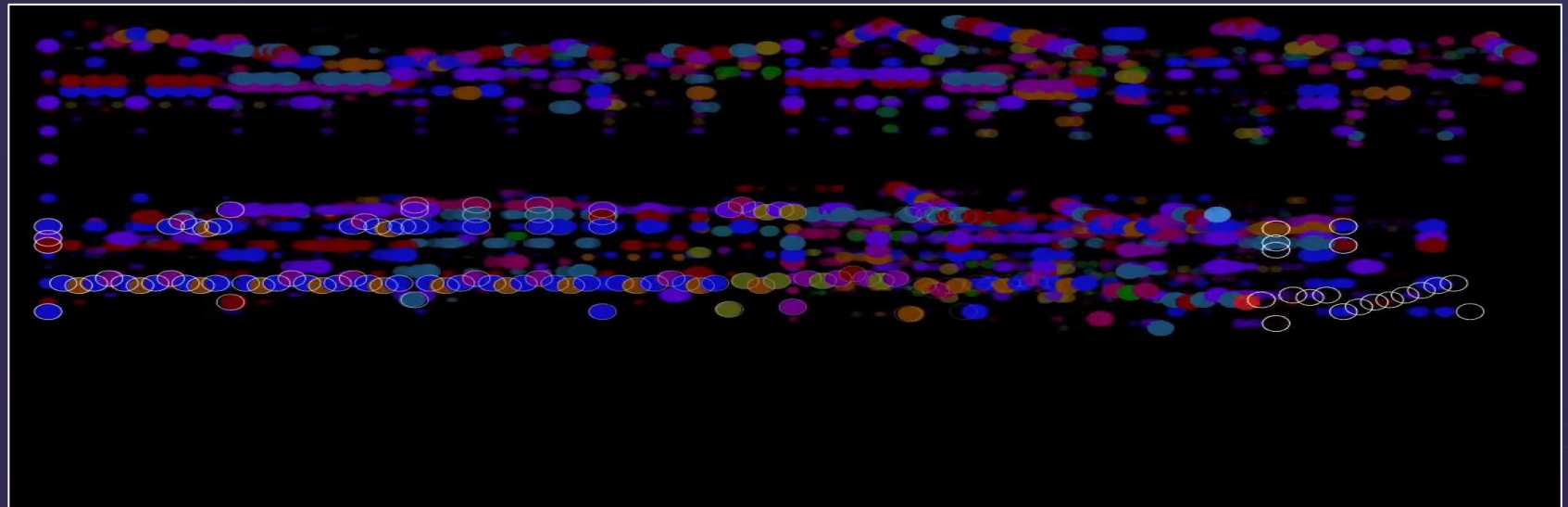
Perceptual Difference: Melodic elaboration in Mozart

Visual realizations by Stephen Malinowski, Music Animation Machine, after Mozart:
“Ah vous dirai-je Maman”, K. 265 (YouTube: Musam 2016)

Example 1:

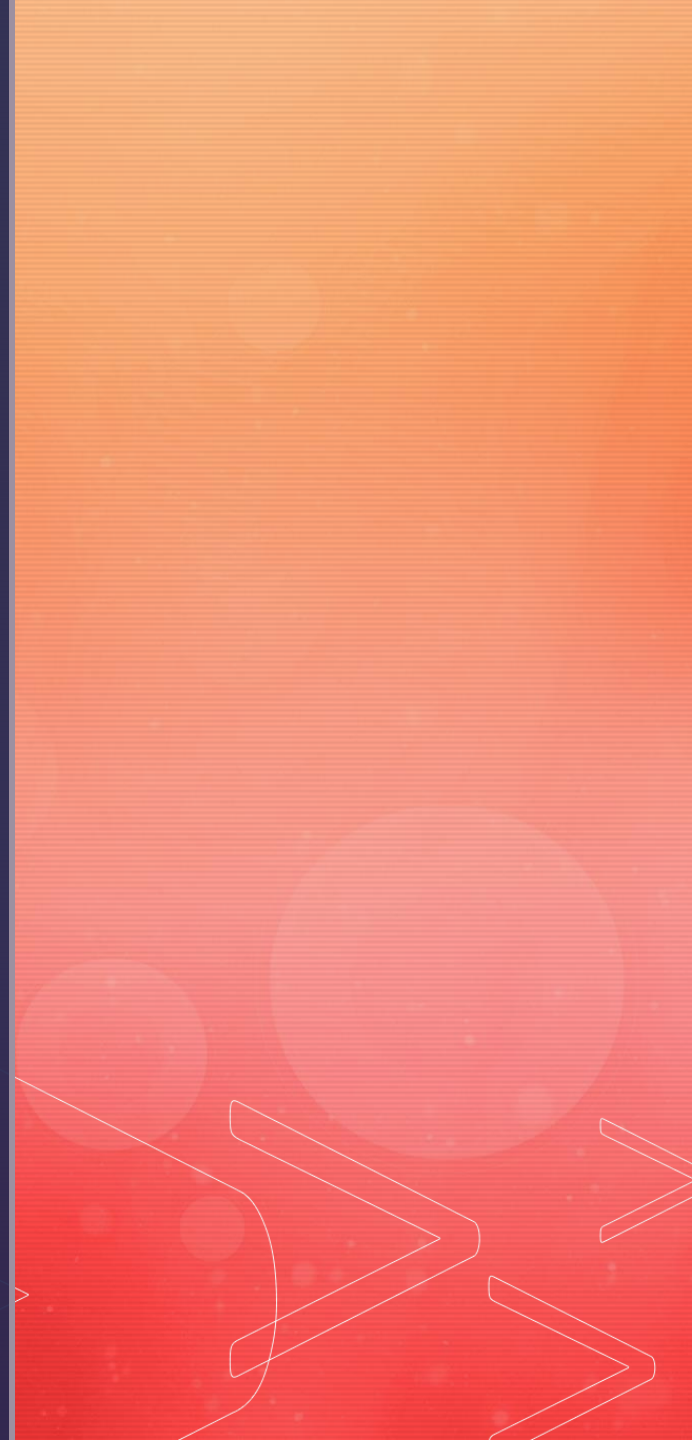


Example 2:



Topic 2 of 2

Musical similarity in music-copyright infringement



Seminal cases

Arnstein vs. Porter (1946)

- establishes concept of **substantial musical similarity** (SMS)
- establishes idea of **lay listener** test

Gaye vs. Williams and Thicke (2013)

- Verdict on appeal—March 2018
- Provisionally **prohibits similarity of style** in protected work

Skidmore vs Zeppelin (2020) “Taurus” vs “Stairway to Heaven”

- Dispute concerns only introductory descending sequence

Ira Arnstein and the concept of substantial musical similarity

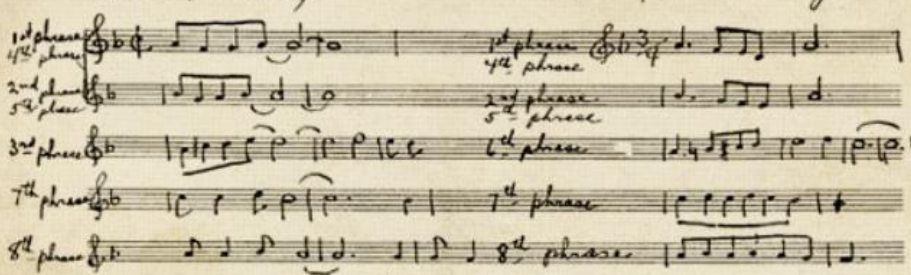
Arnstein vs. Porter (1946)

- Long series of cases (1940...) in which Arnstein was the plaintiff. (He always lost.)
- **1946 ruling by Jerome Frank** established two principles:
 - Similarity must be “**substantial**”
 - Likeness must be determined by “**lay listeners**”

Sardonic view of music copyright

BY IRA ARNSTEIN
I LOVE YOU MADLY

Play Fiddle Play




1st phrase
1/4th phrase
2nd phrase
3/4th phrase
3rd phrase
7th phrase
8th phrase


1st phrase
1/4th phrase
2nd phrase
5th phrase
6th phrase
7th phrase
8th phrase

Chorus

In the chorus it is very obvious that the two composers of Play Fiddle Play could not get any original phrase or idea and therefore went back to "I Love You Madly" using both melody and second part



THE OLD ARM CHAIR,
A Ballad,
HOLTON OLINSTRAD, KNQPIK.



HENRY RUSSELL.

COPYRIGHT LAW AND POPULAR MUSIC

Absent copyright, it is difficult to imagine how the creation of popular songs—short, simple permutations of a limited number of tones, easily reproducible ad infinitum with the readily available technologies of the human ear and voice—could be a remunerative enterprise.

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Similarity of which features?

1946: Notation base

Main parameters

- **Melody**
- **Harmony**
- **Rhythm**

2013: Audio/video base

Main parameters

- **Timbre**
- **Tempo**
- **Dynamics**

► Gaye (L) vs Williams, Thicke (R) (2013; appeal, 2015; Gaye prevailed, 2018)

Estate of Marvin Gaye RE: “Got to Give it Up (1976/1977). This photo: Birmingham, UK 1976



Pharrell Williams and Robin Thicke (2013).



Melodic comparison (involves slipping positions)

- Timbre
- Tempo
- Dynamics

Note position,
Scale degrees



Fig. 1. Marvin Gaye, "Got to give it up," Bars 8-11.³⁹¶



Fig. 2. Pharrell Williams and Robin Thicke, "Blurred Lines," Bars 25-28.¶

What is a substantial melody?

- Timbre
- Tempo
- Dynamics

Note position,
Scale degrees



Fig. 1. Marvin Gaye, "Got to give it up," Bars 8-11.³⁹¶



Fig. 2. Pharrell Williams and Robin Thicke, "Blurred Lines," Bars 25-28.¶

► Gaye estate vs Williams and Thicke; Williams et al vs Gaye estate*

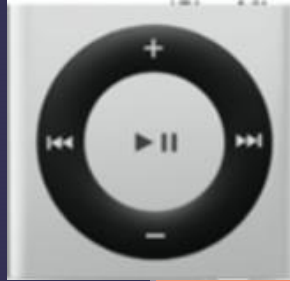
2013 (copyright), 2015 (suit), 2018 (appeal),

Standing judgment:

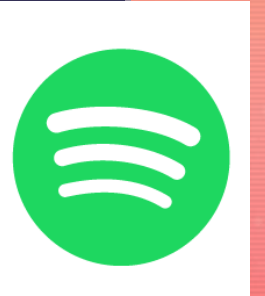
***Musical style is a protectable element**



Changing music technology as pivot



2000



2018

- 1999 Record sales peak
- 2009 Streaming music downloads peak
- 2015 Digital downloads = 90% of music sales

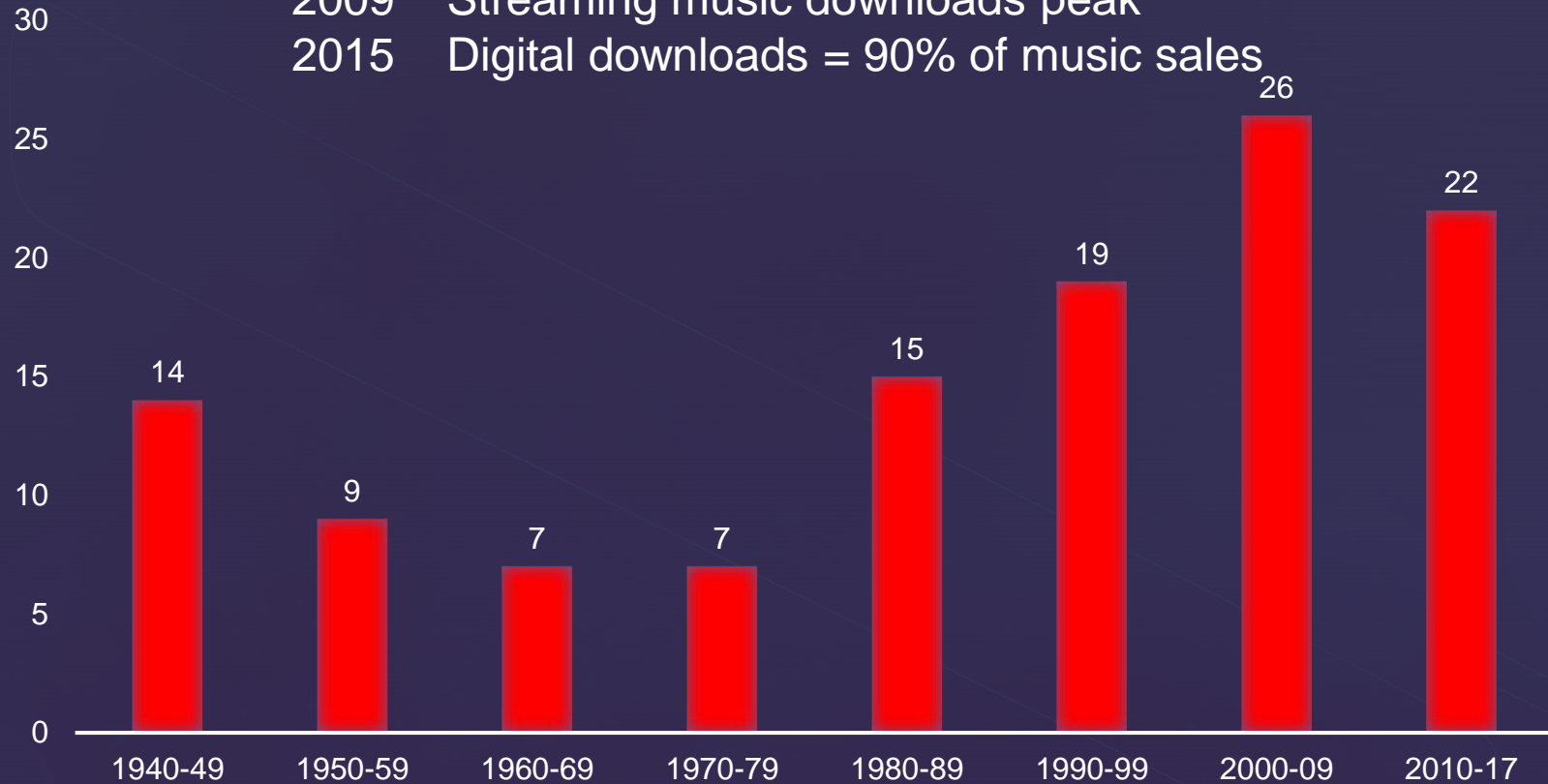
1900



1920



1950



► Controversial points (“Blurred Lines”)

Can a **musical style** be owned by one entity?

Should cases be argued on the basis of **registered copies** only?

See E. Selfridge-Field, “Substantial Musical Similarity in Sound and Notation”, *Colorado Journal of Law and Technology* (2018) in HeinOnline (legal aggregation) via Stanford logon

Should every “**style**” be exclusive to its own creator?

Improvisatory pastiche
(18th/20th centuries)

Ethan Uslan, 2012

(parody)

