IRISH RESEARCH COUNCIL
An Chomhairle um Thaighde in Éirinn

Exploring time-coded comments on YouTube music videos: The past, present, and future of an emerging source for digital musicology
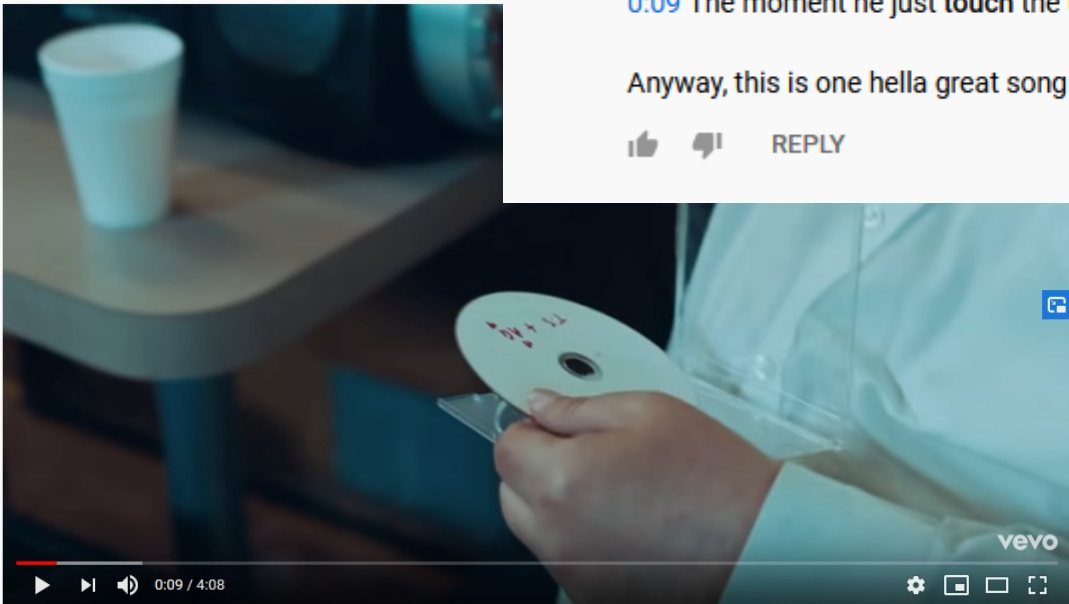
Dr Eamonn Bell
Department of Music
Trinity College Dublin

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CysMus @ Lisbon / Online
3 October 2020

YouTube comments in music studies

- Mangaoang ([2014] 2019)
    - (1,800 comments) reception/circulation of viral media
- Edgar (2016)
    - comments section as site of resistance (N.W.A.)
- Spencer (2017)
    - "hybrid acoustemology"

Time-coded comments (TCCs)

Highlighted comment

■ 2 years ago

0:09 The moment he just **touch** the underside of the CD like that, I can feel dread filling my whole soul

Anyway, this is one hella great song and I'll definitely jam on it for the next couple years

👍 👎   REPLY

0:09 / 4:08

Troye Sivan - Dance To This ft. Ariana Grande (Official Video)

173,634,998 views • Jul 19, 2018

👍 1.9M   👎 51K   ➤ SHARE   ⊟ SAVE   ...

https://www.youtube.com/watch?v=bhxhNIQBKJI&t=9&lc=UgyuteSIn8NlQSwKSnR4AaABAg

VIDEO_ID
TIMESTAMP
COMMENT_ID

Computational studies of TCCs...

- ## Vliegenhart et al. (2012)
  - – LikeLines player protoype

- ## Vliegenhart et al. (2015)
  - – 3,359 YouTube TCCs and VERV taxonomy

- ## Yarmand et al. (2019)
  - – 2,517 YouTube comments and time-based references taxonomy

...and of TCCs and music

- Yadati et al. (2014)
  - 225 TCCs on Soundcloud recordings (EDM), "drop" detection

- Yadati et al. (2018)
  - 2,070 TCCs over 500 EDM tracks, "drop", "break", and "build" detection

- Possibly more forthcoming at ISMIR 2020/First Workshop on NLP for Music and Audio

Context for research

- Archaeology of TCCs as technology of synchronization

- (One answer) CD digital audio was first format to introduce digital time codes widely to listeners

    - Real-time addresses for time-based media

    - More at http://redbook.space

- What was it like before? What will it be like in the future? **What is it like today?**

About the dataset

- ~ **190k TCCs** over **314** videos
  - Culled from 11M comments on 620 videos
  - Collected March to May 2020
- Two clusters of videos
  - **Pop** [~ 2019 charts]
    - (67% of videos; **93% of TCC volume**)
  - Non-pop ["Beethoven" playlists, "classical music" keywords]
    - (33% of videos; 7% of TCC volume)

TCCs — Representative titles in dataset

Top 10 most viewed videos in dataset

| Upload year	Video title	Views	TCCs
2017	Ed Sheeran - Shape of You [Official Video]	4978M	1422
2018	Maroon 5 - Girls Like You ft. Cardi B (Official Music Video)	2818M	3562
2017	Luis Fonsi, Demi Lovato - Échame La Culpa (Video Oficial)	2036M	1060
2018	DJ Snake - Taki Taki ft. Selena Gomez, Ozuna, Cardi B (Official Music Video)	1909M	743
2018	Nicky Jam x J. Balvin - X (EQUIS)	Video Oficial	Prod. Afro Bros & Jeon	1903M	1561
2019	Anuel AA, Daddy Yankee, Karol G, Ozuna & J Balvin - China (Video Oficial)	1495M	89
2019	TONES AND I - DANCE MONKEY (OFFICIAL VIDEO)	1274M	101
2018	Post Malone, Swae Lee - Sunflower (Spider-Man: Into the Spider-Verse)	1178M	336
2019	Shawn Mendes, Camila Cabello - Señorita	1115M	2412
2020	Future - Life Is Good (Official Music Video) ft. Drake	1002M	3399

Bottom 5 most viewed videos in dataset

Upload year	Video title	Views	TCCs
2011	Romeo & Juliet Fantasy-Overture (Tchaikovsky)	459K	14
2008	Bach : Minuet and Badinerie from Orchestral Suite No. 2 in B	857K	15
2011	Totentanz - Liszt	1128K	39
2008	Sorcerer's Apprentice - Paul Abraham Dukas	1225K	33
2016	Most Epic Classical Music Pieces Collection	6-Hour Playlist [HQ]	1335K	60

Number of comments by Target video upload date
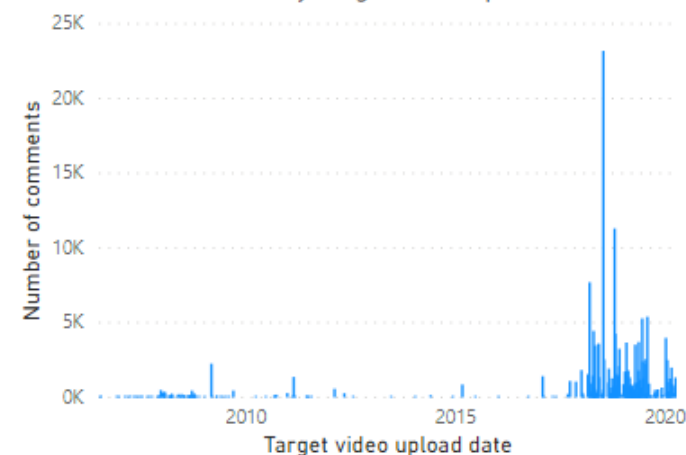
TCCs — Length

Number of TCCs by TCC is "timestamp only"

23.68K (12.35%)

TCC is "timestamp only"
● False
● True

168.08K (87.65%)
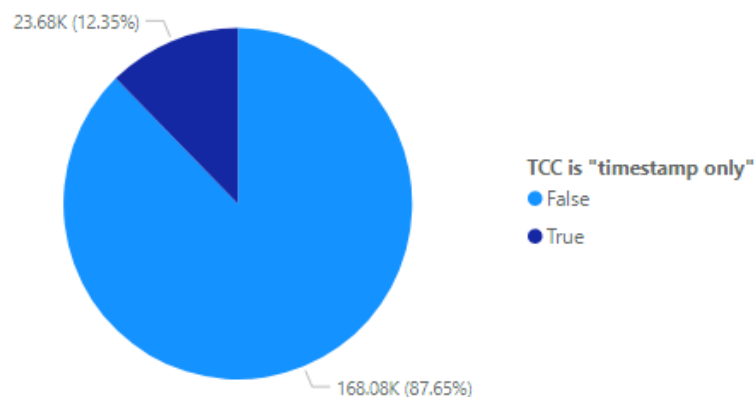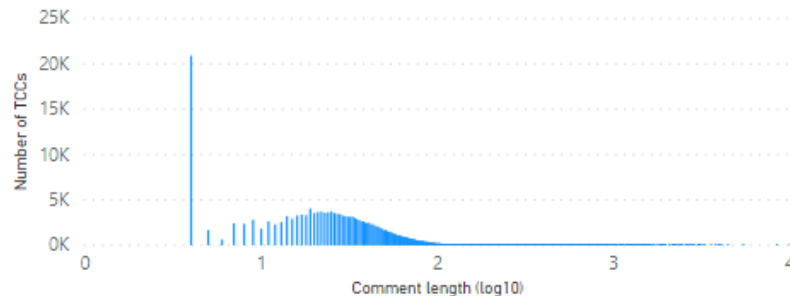
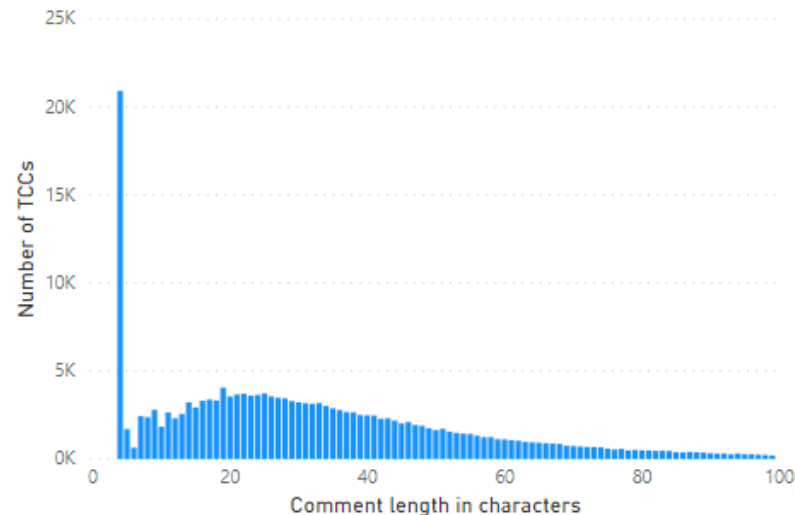**39.22**
Mean length

29
Median length

75.88
StDev length

Number of TCCs by Comment length (log10)

Number of TCCs by Comment length in characters

TCCs — Comments with many timecodes

3 years ago
what is the first piece please?

👍 1   👎   REPLY

▼ View 2 replies

Highlighted reply

3 years ago

0:00 Pachbell - Canon
5:20 Mozart - Eine Kleine Natchtmusik - Andante
11:08 Beethoven - Fur Elise
14:07 Tchaikovsky - String quartet No1 - Andante
20:49 Debussy - Clair de Lune
25:37 Janacek - Idyll for strings - Adagio
31:15 Albinoni - Adagio in G minor
39:45 Debussy - The girl with the Flaxen hair
42:00 Bach - Air on a G string
47:10 Williams - Greensleeve
51:41 Handel - Largo from Xerxes
56:00 Bach - Fugue in C minor
58:54 Holst - The planets - Venus
1:06:56 Bach - Goldberg variations - Aria
Show less

👍 6   👎   REPLY

0:00 / 1:12:41 • Pachbell - Canon

Classical Chillout - Pachelbel,Mozart,Beethoven,Debussy,Janacek,Bach,Handel
16,931,041 views • Dec 9, 2014   👍 92K   👎 4.9K   ➤ SHARE   ≡+ SAVE   ...

https://www.youtube.com/watch?v=hSnD30bcAS8&t=0&lc=UggYoHYcwqcJ8ngCoAEC.8LTW8BIszcL8LTlaOz1jGz
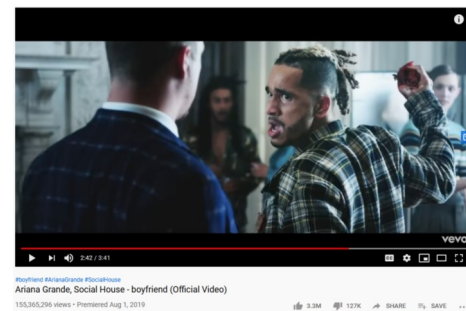
TCCs — Random sample

Video title	TCC text	Likes
Antonio Vivaldi - Winter (Full) - The Four Seasons	3:30 is a big drop 5:53 is also a big drop	2
Ariana Grande, Social House - boyfriend (Official Video)	2:41 klaus mood	0
Lil Dicky - Freaky Friday feat. Chris Brown (Official Music Video)	1:51	0
Lil Dicky - Freaky Friday feat. Chris Brown (Official Music Video)	1:46 song starts just so you know	0
Maroon 5 - Memories (Official Video)	1:22	2

https://www.youtube.com/watch?v=TZCfydWF48c&t=210&lc=UgzGd0rk1PtIQVrXfd54AaABAg

https://www.youtube.com/watch?v=9SRxBTtspYM&t=161&lc=UgwywrOcWhMvyQksBTR4AaABAg

https://www.youtube.com/watch?v=aZla1ttZHaw&t=106&lc=UgyEuXB8aGsstMJJgYt4AaABAg

TCCs — "Chills" response

(Bannister 2019; 2020)

TCCs — Remembering

Billie Eilish - everything i wanted
156,358,320 views · Jan 23, 2020

https://www.youtube.com/watch?v=EgBJmlPo8Xw&t=128&lc=UgwRMK CfEMRKyo-Y7mF4AaABAg
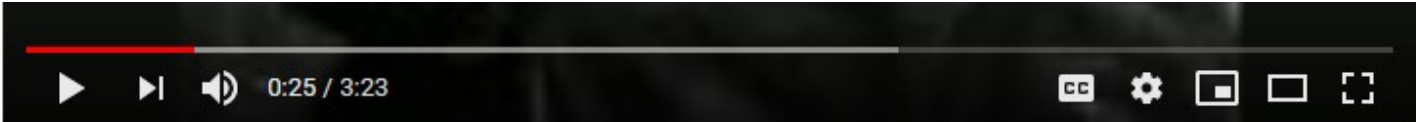
2:08 is def my fav part. Especially when the piano kicks in and the shows the car sinking. Idk why. My fav part of the music is **2:31** because it sounds so gooood.
At **2:08** it gives me the vibes of when we used to play that weird sonic game as a kid and if he was underwater for too long it would play these sounds and I remember it being close to the "do do do dO" in the background so
And it comepletely makes sense because if she is under water too long she will ya know.. drown.
These are just my opinions :o

TCCs — Narrative analysis

TCCs — Fan hermeneutics

Highlighted comment

⬛⬛⬛⬛ 6 months ago (edited)

0:33 - that Demi represents a dark time of her life, 'here we go again' and emo era

0:43 - that Demi is wearing her gym brand 'fabletics' and makes a reference to those times when she was obsessed with working out

...

Read more

👍 61   👎   REPLY

▼ View 3 replies

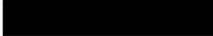#ILoveMe #DemiLovato
Demi Lovato - I Love Me
43,526,690 views • Premiered Mar 5, 2020   👍 1.4M   👎 31K   ↗ SHARE   ≡+ SAVE   ...

https://www.youtube.com/watch?v=vImvzQCb0o8&t=33&lc=UgytW18XBV51AiGB4354AaABAg
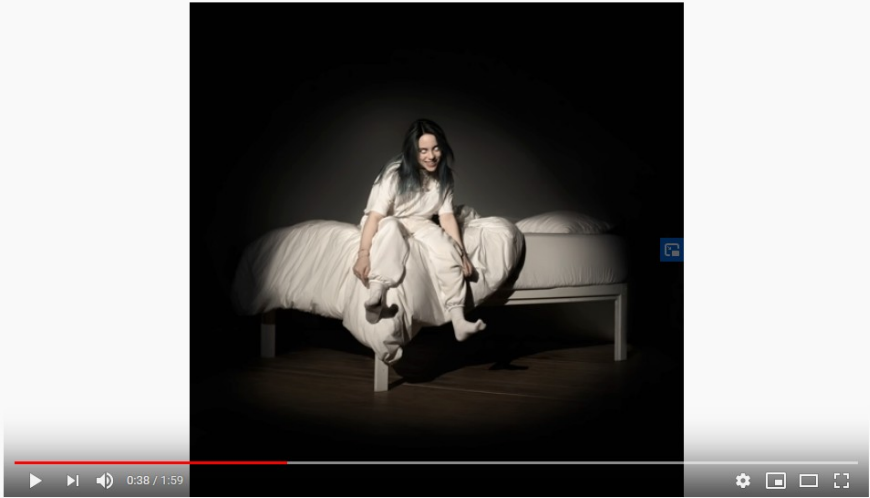
TCCs — Fan labour

Highlighted comment

[redacted] 1 year ago (edited)

0:36 'it's not true ~ i love you
0:44'take me to the rooftop ~ listen before i go
0:48 'told you not worry' ~ ilomilo
0:52 'what do you want from me? ~ bury a friend
1:02 'don't ask questions ~ My strange addition
1:08 'wait a minute' ~ 8
1:11 'don't you know,im not good for you~ when the party's over
1:19 'baby i dont feel so good' ~ wish you were gay
1:24 'and all the good girls go to hell' ~ all the good girls go to hell
1:29 "bite my tongue,bide my time ~ You should see me in a crown
1:36 'what is it about them¿? ' ~ xanny
1:45 'im the bad guy' ~ bad guy

Show less

👍 2.5K 👎 REPLY

▼ View 28 replies

0:38 / 1:59

goodbye
8,677,928 views • Mar 28, 2019

👍 135K 👎 4.4K ➔ SHARE ☰+ SAVE ...

https://www.youtube.com/watch?v=vciZvVJyNYU&t=37&lc=Ugx55FnrYSfJUmt6x754AaABAg

TCCs — Playback control

https://www.youtube.com/watch?v=kg1BljLu9YY&t=0&lc=UgzzU8YAIaNXsxqoIKx4AaABAg

https://www.youtube.com/watch?v=YrbgUtCfnC0&t=25&lc=Ugy3tPhPzC7-IBvhLgN4AaABAg

https://www.youtube.com/watch?v=yaJx0Gj_LCY&t=65&lc=UgzLteqYbGW5ViVc7uV4AaABAg

https://www.youtube.com/watch?v=ir6nk2zrMG0&t=0&lc=UgyEWSRVezO7De0JYQl4AaABAg

TCCs — Trolling is a art

https://www.youtube.com/watch?v=TyHvyGVs42U&t=212&lc=Ugx_Bk5Bj0DZYSMoAal4AaABAg
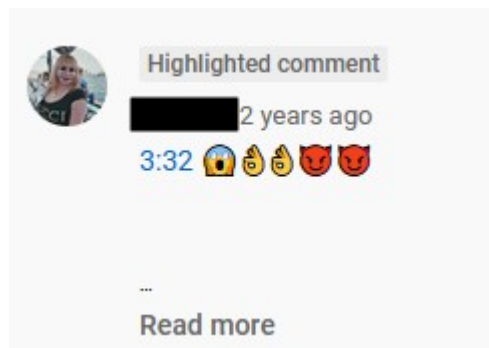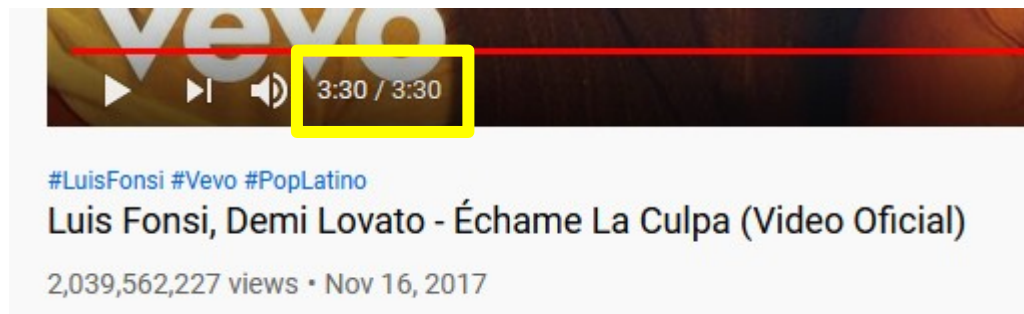
Caveat! Challenges (1)

- Lange (2008)
  - No "ordinary" users [commenters, *passim*]
- Schultes, Dorner, and Lehner (2013)
  - Antinomies of YouTube audience attitudes revealed in survey
- Murthy and Sharma (2019)
  - Racial hate is networked on YouTube
- Linguistic diversity
  - ...

TCCs — Linguistic diversity
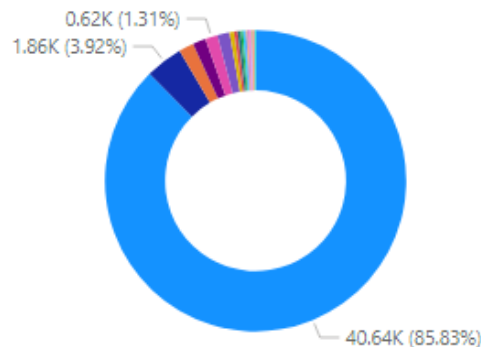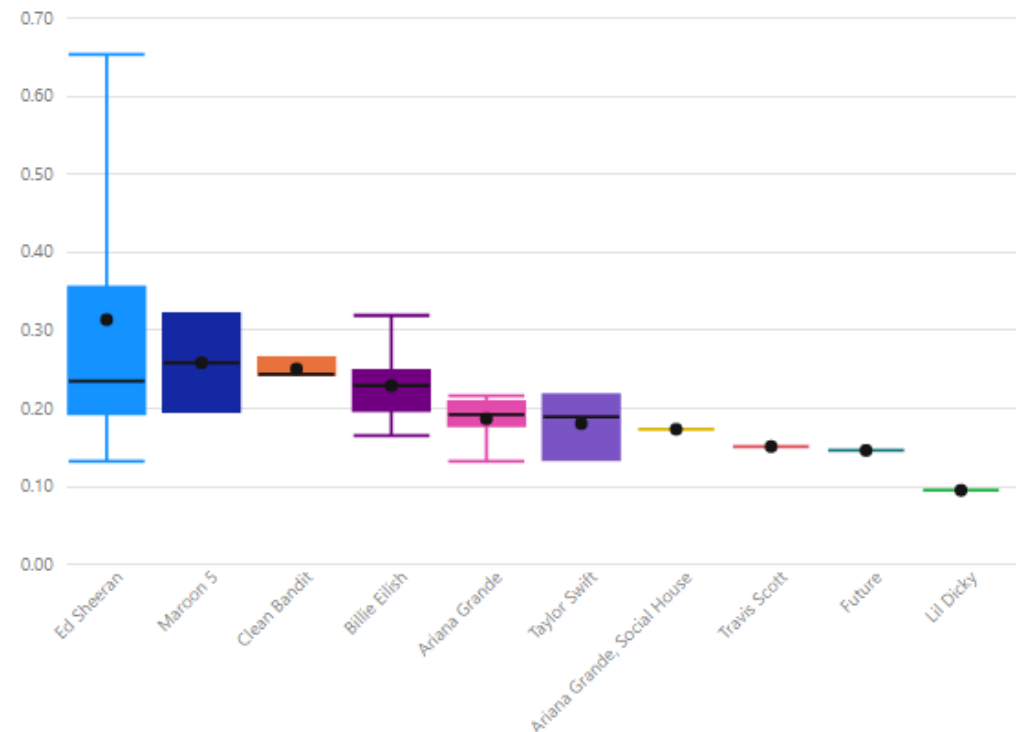
Caveat! Challenges (2)

- Algorithmic bias
  - Throughout **entire** workflow

- Collecting comments from G****e-owned sites
  - Limitations, costs, restrictions on redistribution

- Access to tools
  - Fragmented ecosystem of research software
  - Documentation not much better

Future

- Technical improvements
  - Better NLP, full comment objects from API
- Criteria for collection and preservation
  - Soliciting submissions <belle2@tcd.ie>
- What is the place for the tools and techniques of Big Data™/Business "Intelligence" in the humanities?
  - ...with tongue firmly in cheek

Select bibliography

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www.eamonnbell.com for slides and full bibliography

<belle2@tcd.ie>