

Songs from Ukraine

Adam Colton, University of Utah, atcolton@tutanota.com

May 2, 2022

Introduction

Since the beginning of the invasion of Ukraine in 2022, I have been interested in the content that people in western countries obtain on the war. The age of ubiquitous cell phone usage has increased the availability and variety of first hand video footage. When scenes of mass destruction and sights of otherworldly military shows of force are commonplace, ordinary people have become able to record, edit, and upload their videos to a massive and captivated audience.

Music can be used to lighten or to darken the content of a video. It can make a piece of footage seem triumphant, or hopeless. For those of us who are safe in our homes, it is difficult to internalize the effects of war. The closest most people will get to the battlefield is their phone screen. Every piece of footage, even by itself, can provoke an enormous emotional response. Music is the icing on the cake for shaping a viewers reaction to a piece of content, this is film-making 101. The relationship between the musical genre in these war videos, and the national affinity of the source touches at the kind of emotional appeal that each side makes. In this report I attempt to explore this relationship through an analysis on the music found in pro-Russian and pro-Ukrainian sources.

I constrained my collection to several hand picked Telegram channels. Telegram is a social media platform popular in Eastern Europe that has a chat board format [3]. Telegram channels are a type of chat board where only one account is allowed to post. Telegram offers a balance of being close to first hand sources and having an accessible api. TikTok and other social media platforms may be closer to first hand, but would make data collection impossible.

Data Collection

Telegram channels were found from their url watermarks found in commonly shared video posts, and from web research on Russian forum pages on endchan. Most channels had more than 40,000 subscribers. A table

of these channels can be found in Table 3. I judged the channel affinity by reading some translated text posts. Mostly, it was obvious which side the channel supported. To download videos from each channel, I used the Telethon api [4]. To retrieve song matches, I used Shazam and an open source ShazamAPI[1] [2]. If a video contained music, I only parsed the information from the first song matched. My resulting `dataframe` contained the returned Shazam api call for every video in every channel. The video data surmounted to 240GB as of May 2nd, with 32,737 videos and 2,713 matched songs. The final `dataframe` that I worked with contained meta information on each video along with some interesting bits from what Shazam returned.

Interesting Findings

A Jupyter notebook with my code can be found [here](#). The distribution of music genre between the Russian and Ukrainian Telegrams channels was difficult to discern from the Shazam assigned genres. This distribution can be seen in Figures 2 and 3. I noticed that many Islamic songs from `RKadyrov_95` were assigned to 'Christian & Gospel', which may be slightly confusing. Similarly, many other Islamic songs were lumped in to the 'World' genre. Because I looked at such a small number of channels, the inclusion of `RDKadyrov_95` skews the Russian music towards Islamic genres.

Results of χ^2 testing are shown in 4 reveals that between all of the channels genre was dependent on the channel. Between channels in Ukrainian, genre was independent of the channel, indicating that there is not enough evidence to suggest that the seven Ukrainian channels have significantly different music between them. The Russian channels were significantly different. To treat the music found in the Russian channels as a whole congruous group is not accurate. For exploring the differences in genre between the groups of channels, I would suggest the interactive chord diagram buried in my Jupyter notebook, shown in Figure 4. You can see how `RKadyrov_95` has many connections to other channels that are most likely reposting their content, but has few connections to `Pravda_Gerashchenko`, despite the latter having a high connectivity with the other reposting channels.

The interconnectedness of the music in these channels can also be seen in Tables 1, and 2. The top song, `Доброго вечора` (Where Are You From?) by `PROBASS HARDI` [6], was the most frequently found song for both the Russian and Ukrainian channels. Apart from this song, the Russian channels do seem to represent a pro Russian slant, with songs titled 'Z', and 'Soldiers of Allah'.

The sixth most common song from the Ukrainian language telegram channels was the theme song from a late 90s Ukrainian slapstick TV program `Village of Fools`, (`Деревня дураков`) [5]. I have seen some videos with this same theme song shared on the subreddit `r/combatfootage`. Looking at

their usage in the song data, five out of ten of the matched songs were from Pravda Gerashchenko's Ukrainian language channel. Most of these videos are PG, and show shenanigans of the Russian forces; [one](#) video shows drone footage of a line of Russian infantry where soldiers are slipping in the snow while marching. [Another](#) shows CCTV footage of a Russian soldier falling off of the back of a tank while it is turning. [Another](#) from [polkazov](#) shows Russian protesters being chased by Russian police, the video then changes to showing the efforts of Ukrainian citizens while switching the music to 'Where Are You From'.

I'm looking forward to furthering my statistical knowledge base to learn what secondary statistical assessments can be made on examining the interrelationships of the different telegram channels. I have been humbled by how difficult it is to work with real world data and come up with engaging conclusions, especially when there is so much to work with! I think that χ^2 tests were a good first step, but I feel like they did not convey as much understanding as the interactive chord diagram. I think it is significant that the Ukrainian channels I examined have a more homogenous distribution of song genres than do the Russian channels, but considering the small set of channels along with the methodology with which I selected channels, it is definitely not a fair random sampling of Ukrainian and Russian social media. The chord plot, however, is inherently unbiased, as it makes no underlying assumptions about my handpicked channel groupings. As long as the success rate of matching a song was even across all of the channels, I think that the chord plot provides a fair representation of the underlying relationships between the different groups.

There were many ways to approach this project. I am satisfied with my approach of looking at music because at the very least, I now have some good new songs to listen to. One interesting idea that was suggested to me in peer review was to look at the grouping of channels based on video reposts. There are video hashing algorithms that exist that could fuzzy match between different videos, so you could produce a graph of the interconnectedness of the channels based on the videos that they share. If there could be any way to get at the semantic content of the underlying video, you could do an analysis of how the footage changes as the war progresses, maybe there would be more drone footage being posted in May than during February and March. Maybe the Ukrainian channels post more videos of Russian losses, and the Russian channels post more videos of army logistics. I have seen some posts on reddit of people trying to assess the losses of both sides by looking at the unique vehicle hits that are recorded and shared online. I don't think this would be a valid assessment. Comparing the distribution of different variables between channels is slightly more fair, but still has its own weaknesses.

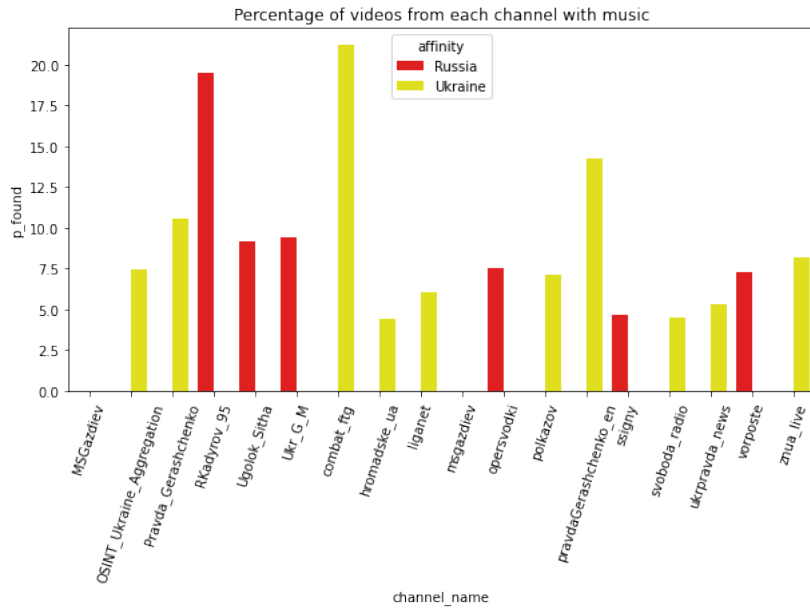


Figure 1: Note: MSGazdiev is an RTNews Telegram channel, and had no music.

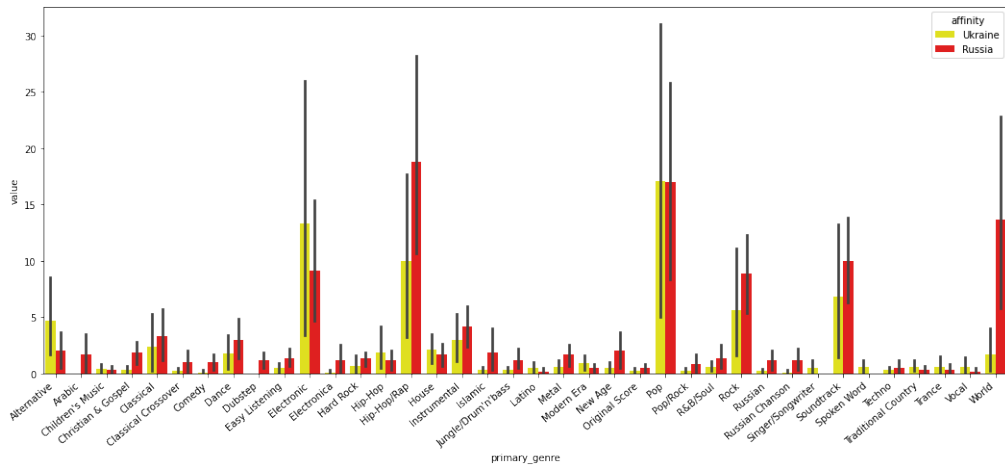


Figure 2: Difference in genre distribution between Ukrainian and Russian channels. See Table todotodo for χ^2 results.

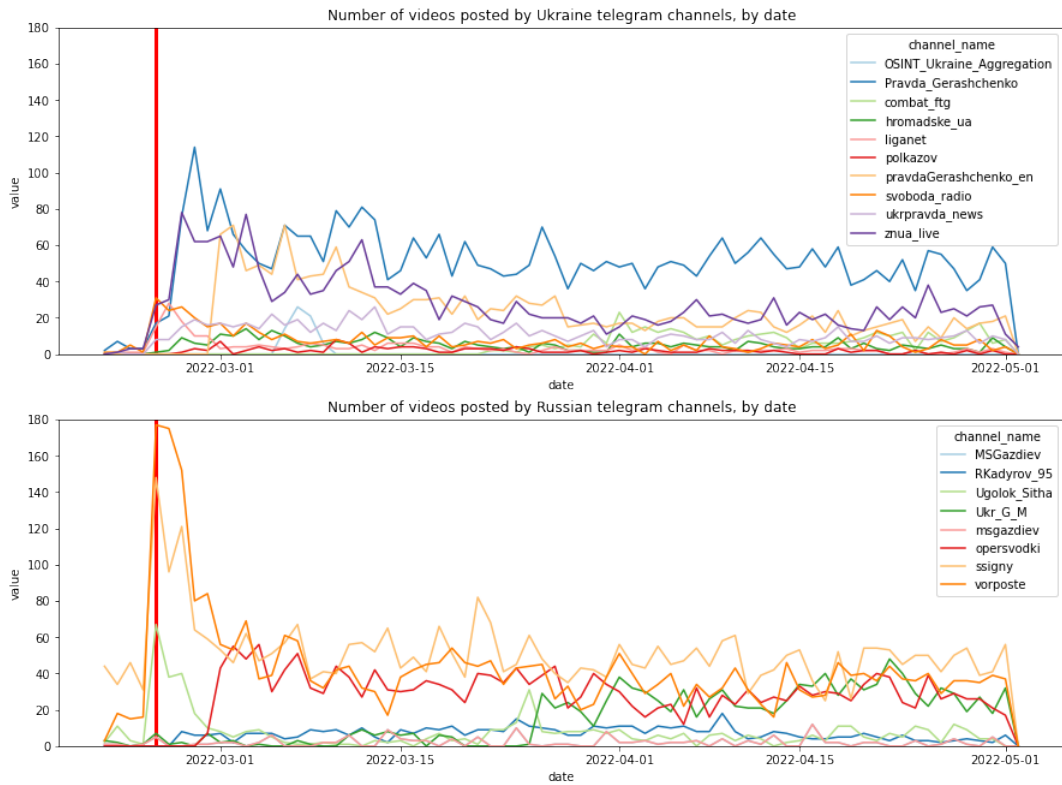


Figure 5: Daily counts of the number of video posts. The vertical marker represents the beginning of the invasion

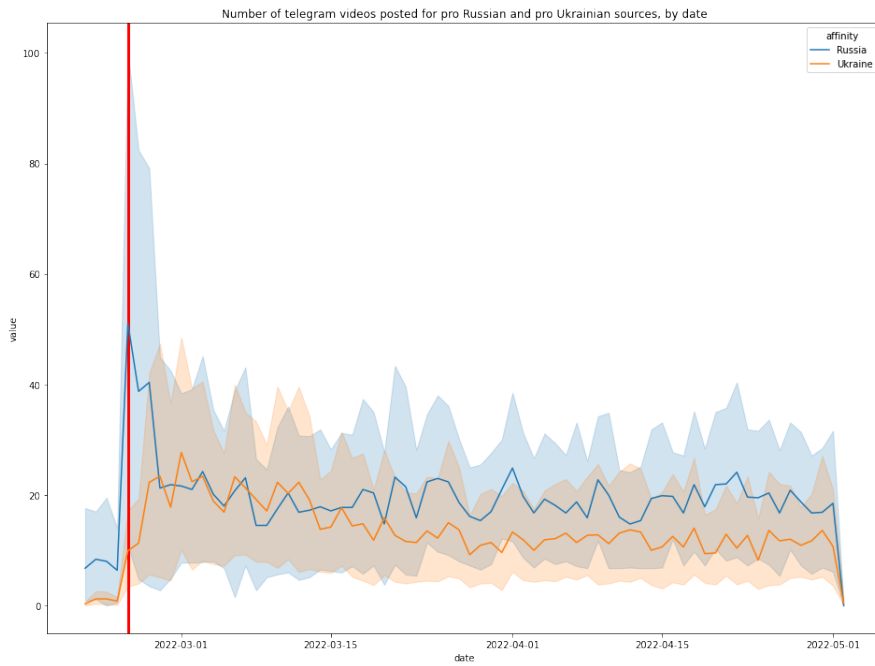


Figure 6: Daily counts of video posts, grouped by channel affinity.

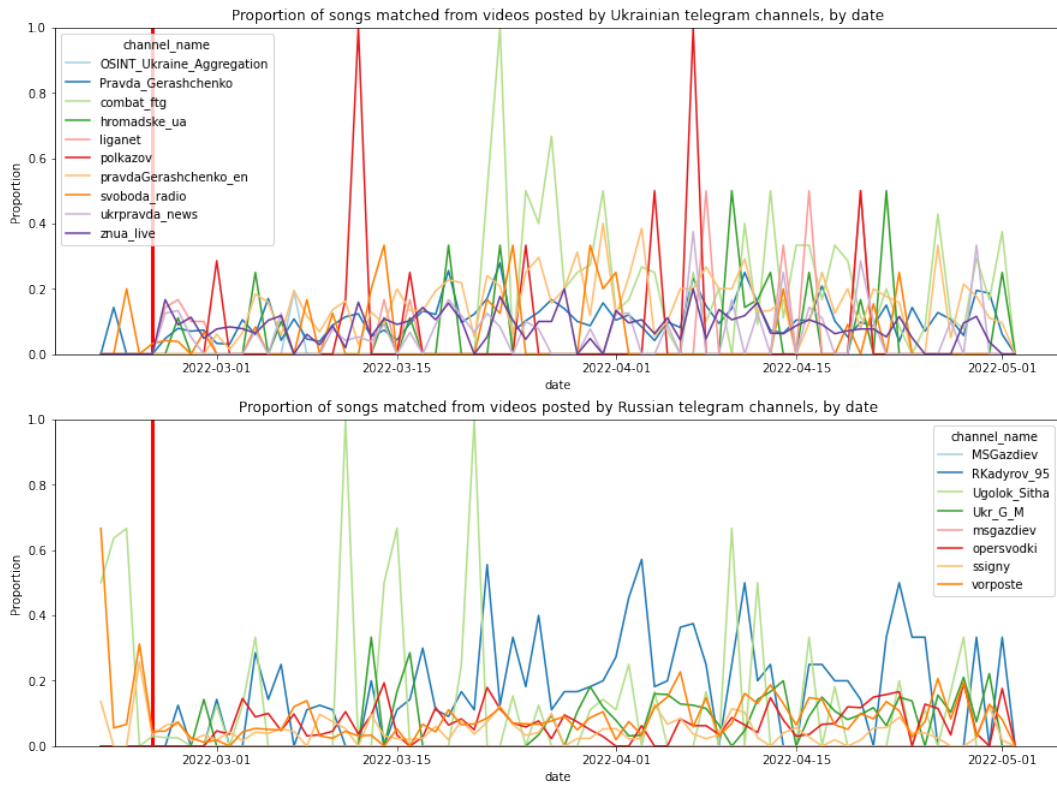


Figure 7: Daily matched songs over daily number of video posts.

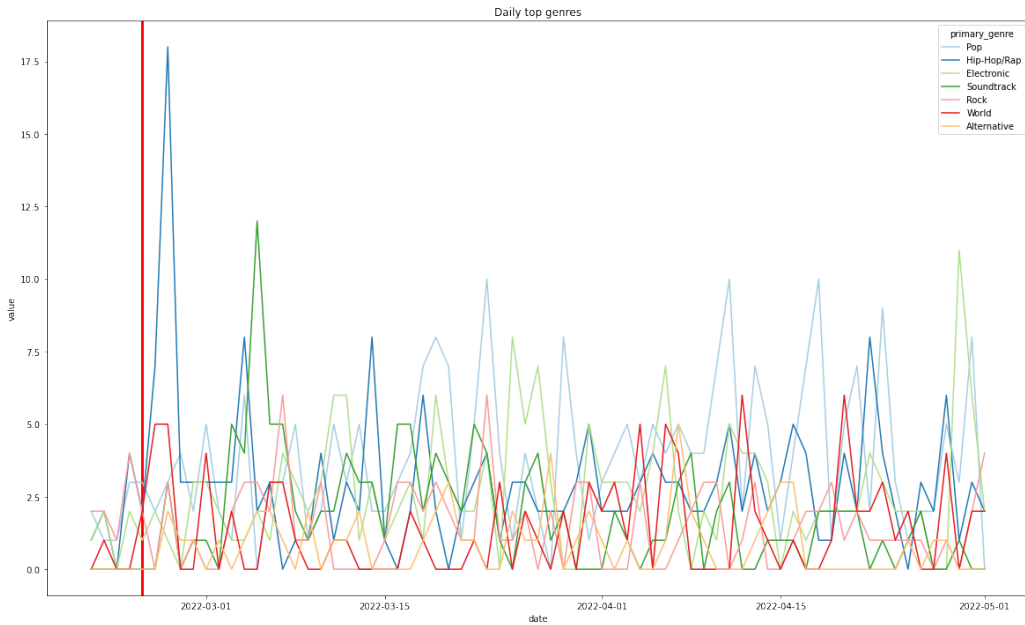


Figure 8: Temporal distribution of song genre, for the seven that were the most commonly found.

Table 1: Most Common Songs From Russian Telegram Channels

Song Name	Count
Доброго вечера (Where Are You From?)	22
Дорога героя	13
Z	9
Свобода или рай	8
Keraunos Killer	8
Ахмад-Хаджи	7
Soldiers of Allah	6
Ахмад ибн Абдул-Хамид	6
Soldat	6
Ne Tvoja Vіyna	6
Вперёд Россия	5
Lightning Naseed	5
The Stars And Stripes Forever	5
Watch It Burn	5
La Câlin	5
У мене немає дому	5
Hero	4
Countdown	4
Challenger I	4
Tytran Fall (Original Mix)	4
Dark Star	4
Battlefield	4
Бог с русскими	4
Guillotine	4

Table 2: Most Common Songs From Ukrainian Telegram Channels

Song Name	Count
Доброго вечора (Where Are You From?)	65
Oy U Luzi Chervona Kalyna [Army Remix]	18
Prepare For The End	17
У мене немає дому	12
Slava Ukraini	12
Мелодия из т/п Деревня Дураков (2021)	8
Буде весна	7
Z	7
Spock 100Bpm	7
Обійму	6
Слава Україні!	6
Funny	6
Dance On Gasoline	6
Русский военный корабль, иди нахуй!	6
Не Твоя Віуна	6
Sahara	6
Гей, пливе кача	6
Гімн України	6
Арта	6
Hostiles	5
Astronaut Together	5
frieener	5
Experience	5
Vse Bydet Horosho (Everything Will Be Good)	5
A Whisper In The Dark	5

Table 3: Telegram Channels

channel_name	link	affinity	language	subs
RKadyrov_95	https://t.me/RKadyrov_95	Russia	Russian	1899875
OSINT_Ukraine_Aggregation	https://t.me/OSINT_Ukraine_Aggregation	Ukraine	English	32
vorposte	https://t.me/vorposte	Russia	Russian	68099
combat_ftg	https://t.me/combat_ftg	Ukraine	English	2223
msgazdiev	https://t.me/msgazdiev	Russia	Russian	24437
Pravda_Gerashchenko	https://t.me/Pravda_Gerashchenko	Ukraine	Russian	477812
pravdaGerashchenko_en	https://t.me/pravdaGerashchenko_en	Ukraine	English	29415
ssigny	https://t.me/ssigny	Russia	Russian	555655
Ugolok_Sitha	https://t.me/Ugolok_Sitha	Russia	Russian	43484
opersvodki	https://t.me/opersvodki	Russia	Russian	449941
znua_live	https://t.me/znua_live	Ukraine	Ukrainian	69375
svoboda_radio	https://t.me/svoboda_radio	Ukraine	Ukrainian	109791
liganet	https://t.me/liganet	Ukraine	Ukrainian	50771
hromadske_ua	https://t.me/hromadske_ua	Ukraine	Ukrainian	111401
ukrpravda_news	https://t.me/ukrpravda_news	Ukraine	Ukrainian	178862
EurointegrationComUA	https://t.me/EurointegrationComUA	Ukraine	Ukrainian	5157
korrespondentnet	https://t.me/korrespondentnet	Ukraine	Ukrainian	23194
colonel_cassad	https://t.me/colonel_cassad	Russia	Russian	64275
Ukr_G_M	https://t.me/Ukr_G_M	Russia	Russian	16151
MSGazdiev	https://t.me/MSGazdiev	Russia	Russian	31195
polkazov	https://t.me/polkazov	Ukraine	Ukrainian	357187

Table 4: χ^2 tests for independence for contingency tables constructed for different variables. The 'Gerashchenko Channel' variable refers to either of the two channels run by Ukrainian politician Pravda Gerashchenko. For all of these obtained test statistics, 'no song found' was not counted as an unique genre.

Variable 1	Variable 2	p Value
Channel Language	Genre	1.8E-25
Channel Affinity (Russian/Ukrainian)	Genre	1.4E-24
Channel	Genre	7.6E-69
Gerashchenko Channel	Genre	0.08
Ukrainian Speaking Channel	Genre	0.93
English Speaking Channel	Genre	2.6E-5
Russian Speaking Channel	Genre	7.4E-15

References

- [1] *Shazam*. URL: <https://www.shazam.com/>.
- [2] *ShazamAPI*. URL: <https://github.com/Numenorean/ShazamAPI>.
- [3] *Telegram*. URL: <https://telegram.org/>.
- [4] *Telethon*. URL: <https://github.com/LonamiWebs/Telethon>.

- [5] *Деревня Дураков (Village of Fools)*. URL: [https://ru-m-wikipedia-org.translate.google.com/wiki/%D0%9A%D0%B0%D0%BB%D0%B0%D0%BC%D0%B1%D1%83%D1%80_\(%D1%82%D0%B5%D0%BB%D0%B5%D0%B6%D1%83%D1%80%D0%BD%D0%B0%D0%BB\)?_x_tr_sl=auto&_x_tr_tl=en&_x_tr_hl=en-US&_x_tr_pto=wapp](https://ru-m-wikipedia-org.translate.google.com/wiki/%D0%9A%D0%B0%D0%BB%D0%B0%D0%BC%D0%B1%D1%83%D1%80_(%D1%82%D0%B5%D0%BB%D0%B5%D0%B6%D1%83%D1%80%D0%BD%D0%B0%D0%BB)?_x_tr_sl=auto&_x_tr_tl=en&_x_tr_hl=en-US&_x_tr_pto=wapp).
- [6] *Доброго вечора (Where Are You From?)* URL: <https://www.youtube.com/watch?v=BvgNgTPTkSo>.