Music Challenge Memes on TikTok: Understanding In-Group Storytelling Videos

ARANTXA VIZCAÍNO-VERDÚ[1]
University of Huelva, Spain

CRYSTAL ABIDIN
Curtin University, Australia

Through visual and audio elements in videos no longer than three minutes, TikTok has created new interactive modes to understand music. Amid its growing popularity, this study focuses on posts nestled under the hashtag #MusicChallenge to understand what constitutes a "music challenge" on TikTok, how this trend comprises a mode of storytelling rather than a competition, and what in-group affiliations occur through audio memetic music via image, audio, text, and story strategies. Through a qualitative content analysis via a music storytelling codebook consisting of image, audio, text, storytelling, and in-group affiliation codes, we analyzed 150 posts in English, Spanish, Portuguese, and French. This trend revealed a series of immersive-narrative patterns that define the music challenge meme as a phenomenon of transmedia storytelling, self-expression, and connecting people with in-group affiliations related to nostalgia, expertise, friendship, citizenship, and age, among others, mediated by music.

Keywords: music challenge, memes, TikTok, storytelling, transmedia music

The current digital landscape has changed the way users behave and spread narratives, supported especially by technology and platforms. As pioneer scholar of transmedia storytelling Jenkins (2006) noted,

Arantxa Vizcaíno-Verdú: arantxa.vizcaino@dedu.uhu.es
Crystal Abidin: crystalabidin@gmail.com
Date submitted: 2021-06-17

we are living in an era where stories and relationships are played out in media spaces by building fictional worlds that are influenced by corporate and citizen decisions. In this context, society contributes to new storytelling forms on social media, where users can express their voice, identity, and emotions using various digital resources such as text, images, memes, and music (Kim & Li, 2021). This communicative dynamic is based on hyper-narrativity (Wagener, 2019) and the "memefication" of collective identities (Ask & Abidin, 2017, p. 7), which create discourses and content through platforms such as TikTok, where humor, imitation or replication, and group affiliation play a leading role.

TikTok has grown in popularity over the last few years as a targeted platform for the creation and dissemination of short videos (Xu, Yan, & Zhang, 2019). To understand its impact, we must pay close attention to the audio elements, especially audio memes and music in posts, as the platform's core features. Popular music has evolved over time through different technological phases. From the crooners of the 1950s to the multitracks of the 1970s until today, it was common for musicians to spend weeks recording in the studio. Currently, anyone with an Internet-connected device can easily record a track or music video because of the advancements in technology that have impacted music creation processes (Ashbourn, 2020). In this changing landscape, the company ByteDance created TikTok—an app that followed the success of the Chinese version domestic "Douyin" in 2016, that, in November 2017, acquired and integrated Musical.ly into its interface before an international launch (Wang, Gu, & Wang, 2019).

According to the "Store Intelligence Data Digest" report about the latest mobile trends (SensorTower, 2020), TikTok is one of the top 10 most downloaded apps worldwide in the last decade. This smartphone app is available for Android and iOS, allowing users to create short videos set to an audio clip, a song, or a prerecorded video sequence with effects, stickers, filters, augmented reality, and green screens. In particular, users often merge music and lip-syncing into posts. The platform creates a large and diverse audience beyond the traditional model of other egocentric social media through several of its key features: Its unique short-form videos that lower the barrier to content creation and are adapted to the fast-paced information consumption of today's digital society; the video editing system that allows recording, using transitions, and modifying speed-time, among others; the simplified interaction structure for following, commenting, "liking," and sharing posts; and the "For You Page," which is the default page that opens on the app, where users are offered an unlimited scroll of videos in a top-down carousel format based on a proprietary algorithmic recommender system. This consists of identifying and focusing one's own connections, also known as "alters," and the relationships among users (Burgette, Rankine, Culyba, Chu, & Carley, 2021).

As identified by communication scholars Jenkins, Ito, and boyd (2015) in their study of digital participatory cultures, audiences partake in different levels of activity on social media, such as shifting from *viewing* to *interacting*, *creating*, and *diffusing* content. This conveys different extents of immersion and interactivity, as audiences move toward multiple online environments for building fictional worlds. On TikTok, audiences become specific local communities with their own members, memories, and imagery (Dans, 2015), whose stories connect each other through in-group and out-group affiliations. Concerning the concept of "group affiliation," we consider the study of psychologists Harré and Mogbaddam (2003) on the *self* and *others* from the positioning theory. Following this theory, we understand in-group affiliation as (a) the position of the individual, which constitutes the cluster of dynamic rights and duties to adopt, strive to,

be pushed into, be displaced from, or be refused access in society; and (b) the story line, which comprises the processes of positioning through nonrandom episodes that tend to follow established developmental patterns based on narrative conventions. Thus, we refer to the categorization of membership among individuals to construct collectives that are associated by normative cultural characteristics (Bernhard, Fehr, & Fischbacher, 2006) through "insider" and "outsider" groups. In this sense, through short, fun, entertaining transition videos on TikTok, we are facilitating a kind of content contextualization and memetic speech practice (Zulli & Zulli, 2020) that connects different generations of people from different places and communities with similar interests (Sidorenko-Bautista, Herranz-de-la-Casa, & Cantero-de-Julián, 2020).

As will be discussed below, TikTok is a space anchored on the dissemination of narratives and viewpoints through music and audio templates (Abidin, 2021) where users find a venue for self-expression, content creation, and storytelling (Omar & Dequan, 2020). Therefore, our aim is to analyze music challenge memes through image, audio, text, and story to understand how these kinds of challenges are constituted as significant transmedia music-group affiliation through storytelling.

The Primacy of Audio and Music on TikTok

TikTok's audio background is one of its main unique features. Communication networks based on the use of such audio, such as the deployment of TikTok music challenges, have generated new ways to build relationships among users. These consist of creating videos where a challenger completes a goal and invites other users to participate and share it (Kriegel, Lazarevic, Athanasian, & Milanaik, 2021).

The core message of the challenges includes music from a wide variety of music genres and even original audio clips as background content: users' voices, songs from the music industry, and lip-syncing battles (Medina-Serrano, Papakyriakopoulos, & Hegelich, 2020). In their study of Douyin, the Chinese domestic version of TikTok that shared rather similar features in its earlier iterations, scholars Feng, Chen, and Wu (2019) note that the hierarchical structure of the user's experience, the platform's music, and audio library capabilities identify three levels of interaction: (1) emotions, that is audio dubbing with funny stories; (2) interactivity, that is imitations, mind relaxing, and liking—like collective memification (Ask & Abidin, 2017); and (3) usability, that is the easiness to switch between content, effects, and so on. The anthropologist Abidin (2021) suggests in her mapping analysis of Internet celebrity practices on the platform that on TikTok, "audio memes" and the texture of sound take on an 'intimate disposition,' requiring care, tact, and wit to situate and decipher" (p. 80) to tell stories, advance plot lines, or complement audios with visual and textual content modifying the tonality of the narrative.

Scholars have extensively analyzed music on different platforms such as a social media promise. For example, YouTube informal music learning communities (Liikkanen & Salovaara, 2015), Instagram music performances (Jaramillo-Dent, Vizcaíno-Verdú, De-Casas-Moreno, & Baldallo-González, 2020), and Twitter music networks (Dahl, Herrera, & Wilkerson, 2011), among others. On TikTok, we find a similar user-generated content (UGC) system, where video and music are once again the leading features. As scholars Olivares-García and Méndez-Majuelos (2020) state in their TikTok trends analysis during the COVID-19 lockdown period, on this platform there is a space for performances and portrayals related to dances, choreography, audios, and music (Kennedy, 2020). Thus, beyond the functional nature of the audio-music

on TikTok, neither study has focused on the music's significance involving millions of generations, languages, and personal stories worldwide.

Storytelling, Transmedia, and Music

Sharing is one of the most popular social and communicative activities on social media, which involves contextualizing and resymbolizing meaningful moments with and between users (John, 2017). In this practice, UGC has emerged as a digitally mainstream pattern that has changed how people create and tell stories (Meneghello, Thompson, Lee, Wai-Wong, & Abu-Salih, 2020). On TikTok, UGC has decentralized how users understand, identify, and share content (Lu-Jia, Shen, Li, & Chen, 2018). Indeed, one of the main characteristics of digital culture is "participation" (Jenkins, 2006, p. 23), where collaboration allows users to understand themselves in a self-network (Papacharissi, 2019).

On social media, citizenship has played a major civic role supporting a sense of belonging to a group, usually fostered by videos, images, and stories (Choi, Nah, & Chung, 2021). This means people across the world develop connections based on self-expression via storytelling, which is configured through complex information systems and technological devices. Our understanding of storytelling in this study concerns past events organized temporally, created, and spread by people who make sense of their existence (De-Fina, 2016).

Storytelling allows creators online to share content episodically across multiple formats and features. However, the truly interesting aspect of social media is that this storytelling approach is often spread across a single unit of expression rather than multiple channels (Page, 2015), such as TikTok's "audio memes" (Gleason et al., 2019, p. 374). This flow of stories has been reinforced across transmedia scholarship, addressing analyses on cinema, photography, marketing, or education (Javanshir, Carroll, & Millard, 2020). In theoretical terms, transmedia storytelling has been commonly understood as a complex aggregation of fictional stories that synthesize a universe across multiple media formats (Jenkins, Ford, & Green, 2013). TikTok's algorithmic content distribution system has led to the emergence of "transmedia networks," where stories navigate and are re-signified through this single unit of form (Ruppel, 2012, p. 466).

In this study, we draw on such "transmedia network" processes through audio and music where individual dynamics create a sense of belonging (Bernhard et al., 2006, p. 218). However, since the format of audio and music are distinct from oral or written storytelling, we should consider the different potentials and implications of transmedia music. This concept refers to music that becomes a spreadable unit as the storytelling matrix that is expanded through UGC (Brembilla, 2019). Within social media contexts, "transmedia music" comprises elements such as image or audio, that re-signify the song through creative configurations under the influence of a storyteller (Vizcaíno-Verdú, Aguaded, & Contreras-Pulido, 2021, p. 15). On TikTok, Georgakopoulou's (2007) "small stories" are understood as fragmented narratives constantly developing through a transmedia flow, generating complex conversations and networks (p. 57). For this purpose, we intend to explore how TikTok may become a unique platform for storytelling through memetic music.

Materials and Methods

This study takes interest in one of the most popular interactive music trends on TikTok, by focusing on user-led TikTok "music challenges," aiming to classify musical practices through the elements involved on TikTok (image, audio, text, story, and group affiliations strategies) to understand the platform as a unique storytelling environment that promotes a sense of belonging. The questions that guided our in-depth analysis are as follows:

RQ1:   *What constitutes a "music challenge" on TikTok?*

RQ2:   *How are music challenges a mode of storytelling rather than a competition?*

RQ3:   *What in-group affiliations occur in audio memetic music through image, audio, text, and story strategies?*

Codebook Development: TikTok Storytelling

To analyze our data, we developed a codebook informed by grounded theory, which is a method of systematic data collection to identify and analyze human activity through inductive-deductive coding processes (Glaser & Strauss, 2017). We used an exploratory and qualitative method because no research has analyzed the memetic music for storytelling on TikTok to date (Creswell & Creswell, 2018). As we discussed in the theoretical framework, several studies highlight the storytelling and the transmediatization process of music (Brembilla, 2019; Vizcaíno-Verdú et al., 2021). However, they do not delve into the development of a sense of belonging through associated normative characteristics (Bernhard et al., 2006) through audio memes on TikTok. Therefore, we carried out an inductive data interpretation process from inherent features of the platform to general in-group and out-group affiliations categories.

The deductive analysis focused on developing a coding framework through thematic categories. The codebook is a nonnumerical systematic content analysis tool based on categories (codes) designed to recognize individual patterns to understand its relationships. It involves determining codes related to the research questions and the study context both to interpret a phenomenon and to reach conclusions (Roberts, Dowel, & Nie, 2019). For this case, we followed the TikTok codebook analysis process of Zeng, Schäfer, and Allgaier (2021), and Ando, Cousins, and Young (2014). This consisted of analyzing predesigned codes based on preliminary theory.

First, we created a codebook structure through organization elements including the code, a brief definition, and guidelines for when to use and not use the code (MacQueen, McLellan, Kay, & Milstein, 1998) to operate in the ATLAS.ti 9 software. ATLAS.ti 9 facilitated the systematic qualitative analysis of complex phenomena in textual and multimedia data processing. The purpose of this procedure was to develop a music challenge analysis based on five coding categories: image, audio, text, storytelling, and group affiliation strategies on TikTok.[2]

---

[2] See Table 1 at https://doi.org/10.6084/m9.figshare.14666850.

The codebook was created and adapted from the creation essentials of the TikTok app (TikTok, 2021), and the dimensions of narrative analysis of music videos (link between music-image, video type by genre and topic, and singer's role; Sedeño-Valdellós, Rodríguez-López, & Roger-Acuña, 2016). Primarily, we looked at the corporate material and the platform itself to verify all the elements available and analyzable (visible features) on the platform: filters, lighting, effects, speed, stickers, transitions, user performance, audio types, overlay, caption, hashtags, and paralanguage. Once we identified the elements, we turned to the transmedia music video analysis of media scholars Vizcaíno-Verdú and colleagues (2021), to collect those items that referred specifically to the aspects of storytelling: aesthetics, theme, genre, and the role of the performer. Since the analysis focused specifically on the challenges discussed in previous literature (Kriegel et al., 2021), we included the item "challenge" in the tool to identify and classify the different typologies. Finally, we introduced four group affiliation aspects suggested by scholars Zappavigna and Martin (2018) in their study on tagging value content in social media: generation (age), geography (location), language(s), and music genre identity.

Data Collection Criteria

TikTok allows users to locate videos through popular hashtags, videos, other users, and sounds. We chose to find videos about the music challenge phenomenon by manually scraping the hashtag "#MusicChallenge" on TikTok during the period April 1–3, 2021, which yielded a combined total of 421.6M views at the time of the study. Following the data collection method applied by scholars Medina-Serrano and colleagues (2020) in their research about political dance communication on TikTok, we relied on the platform's algorithmic search system to locate and identify popular audio memes.

The manual scrapping process for collecting the TikTok video sample consisted of creating an Excel spreadsheet with the fields "video link" and "video caption—including hashtags and emoji," and logging into the platform with a new account created specifically for the analysis to use a "new" algorithmic recommendation system to assist in surfacing content according to the specific search criteria. We then collected videos from the full list for entry into our Excel spreadsheet via the ATLAS.ti 9 software. The inclusion criteria for the selection of the sample were: (1) video including music or song background; (2) video introducing a challenge or a meta-challenge (checking how a challenge plays); and (3) appearance of performers (people, animals, or animated objects). In contrast, posts with the following qualities were excluded from the sample: using the hashtags without actually engaging in the challenge; giving meta-commentary about the challenge without actually engaging in it; and posts in languages outside of our foci. Our study focused on posts in English ($n = 125$), Spanish ($n = 17$), Portuguese ($n = 7$), and French ($n = 1$), as these were the four languages and cultural contexts the authors were equipped to analyze. For the hashtag query, we collected 150 videos in total.

Ethical Considerations

In terms of ethics, we began by considering the status of the users' analyzed content and determined the following: (1) TikTokers participating in music challenges might fall into the category of "vulnerable groups" (Tiidenberg, 2018, p. 4); (2) The TikTokers in our study range from ordinary, mostly unknown users to aspiring microcelebrities, making it hard for us to determine if all users sought to achieve

"high visibility" (Abidin, 2016, p. 7) beyond TikTok; (3) The small content creators in our study were unlikely to have considered the full implications of the public display of their data, such as their "persistence" and "scalability" (boyd, 2010, p. 7) and the potential to receive unexpected publicity or unwanted attention. Thus, we opted to anonymize the contents analyzed. Following from renowned Internet ethics scholar Annette Markham's (2012) proposal on ethical practice for ambiguous Internet contexts, we anonymized the data by replacing TikTok screengrabs with our own original illustrations to retain the privacy of users through a "creative fabrication" (Markham, 2012, p. 335), which allows us to interpret highly visual data in a bricolage-style transfiguration of original data.

Results and Discussion

The analysis of music challenges provided an insight into the content posted through audio memes on TikTok. We first imported all the data into the quantitative social network analysis Gephi 9.2, which is a visualization software, to explore codes for all kinds of graphs and networks, to preview general trends and guide the next stages. As shown in Figure 1, we found a centralized trend in group affiliation codes detailed below.
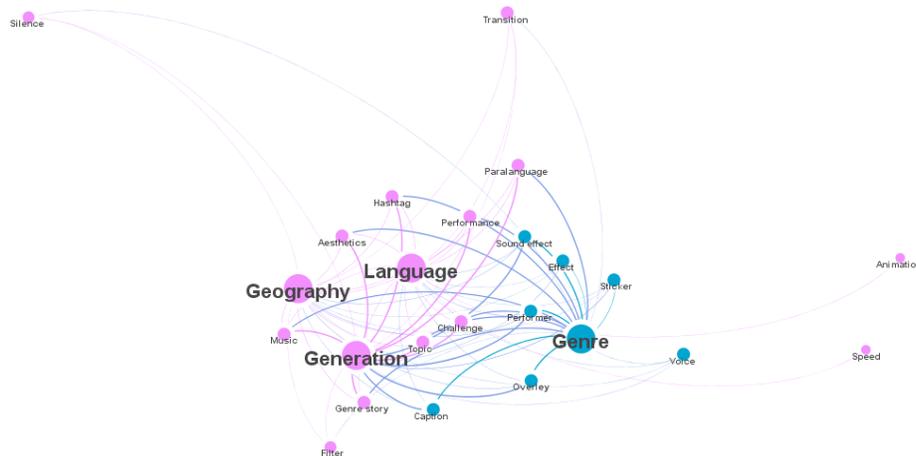
Figure 1. Music storytelling codes preview on TikTok.

In the preview, two groupings were highlighted: (1) geography, language, and generation (in pink); and (2) musical genre (in blue). The first community was supported especially by aesthetics, music, topics, challenges, hashtags, performances, and paralanguage, and the second by sound effects, the performer's attitude, stickers, and voices. This means that the music challenges presented a higher relationship between the codes of geography, generation, and language, as many of the posts were a mix of these three group affiliation aspects. However, posts related to the music genre generally focused only on the track or song, skipping any additional value.

Image Codes: Illustrated Music Life

Filters for Adding Value

Following the codebook, we analyzed filters first. On TikTok, the use of filters consists of selecting a hue from the "Portrait"; "Landscape"; "Food"; and "Vibe" in the video editor, and adjusting the gradation according to the user's preferences. Although this visual element was quite difficult to identify because it was confused with the background or lighting environment itself, we found posts where this element emphasized the content. As shown in Figure 2, two examples of image color tones are the "Portrait" and "Vibe" filters available on TikTok to recreate atmospheres referring to the music in the challenge.
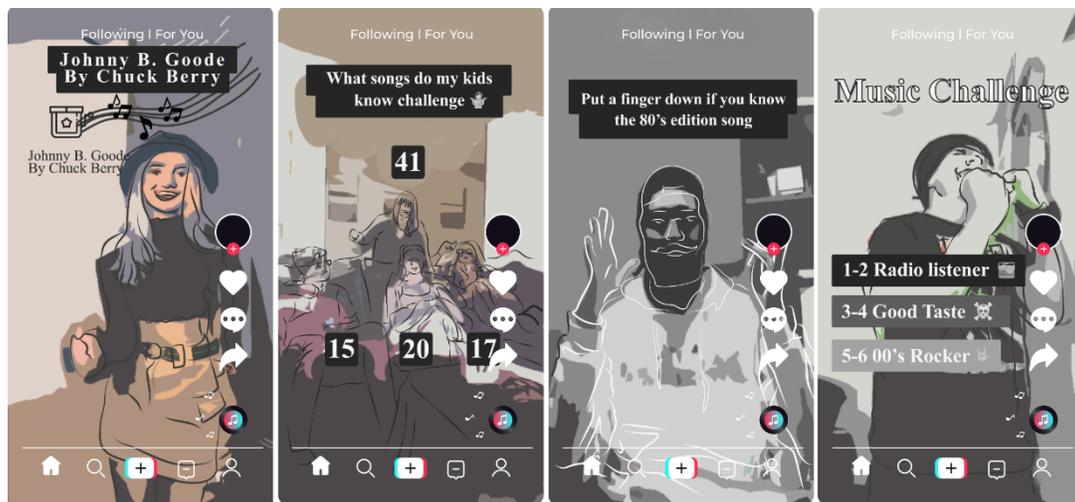
Figure 2. (L–R) 2.1 and 2.2: Portrait filter; 2.3 and 2.4: Vibe filter.

For example, in Figure 2 (L–R): (2.1 and 2.2), the TikTokers used sepia hues (S1 to S10 filters) to create a retro mood with music from the 1950s or to create warm tones for familiar challenges; (2.3 and 2.4) used black-and-white tones to create an antique effect (V1 to V3 filters) with music from the 1970s, 1980s, and 1990s, or to refer to rock music. We also found an additional use of the TikTok filter, involving user modification: changing the hue to the rhythm of the music to depict a party scene and splitting the image into halves to segment responses to a challenge. This case was not random or simply ornamental, but was used specifically for the purposes of fitting the TikToker's identity affiliation into the musical element. That is, the TikTokers used the filters in an effort to add more information to their interpretation of and relationship to the songs and genres in the music challenge. For instance, in Figure 3, the TikToker moved to the bright hue on the right half of the screen, while smiling and dancing to the songs she knew (3.1., where color represented successful musical knowledge and positive group affiliation), and to the black-and-white hue on the left half of the screen, appearing confused, surprised, and disappointed (3.2., where the suppression of color represented lack of musical knowledge and negative group affiliation).
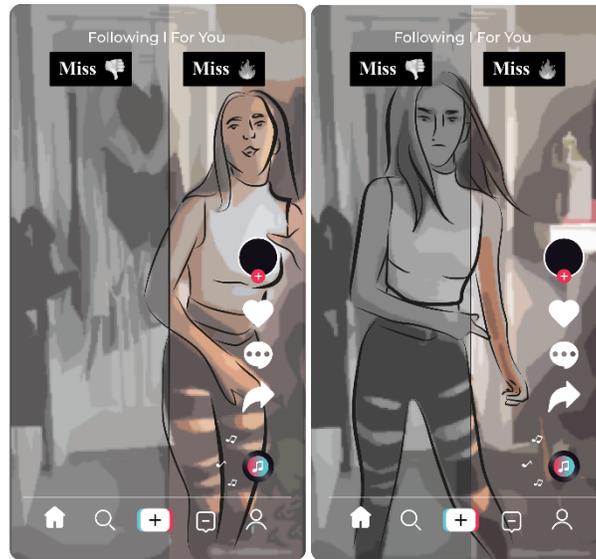
Figure 3. (L–R) 3.1: Successful musical knowledge connotated by colored filter; 3.2: Lack of musical knowledge connotated by black-and-white filter.

Effects to Support the Challenge

Effects were widely used in these posts to support the challenge or to add a decorative element to the video. In Figure 4, we found that the most used cases were (L–R): (4.1) games where users indicate knowing or not knowing a song through a predefined platform effect; (4.2) green screen to add personalized backgrounds; (4.3) reactions to user comments for a challenge; (4.4) singing games involving a musical group or company.
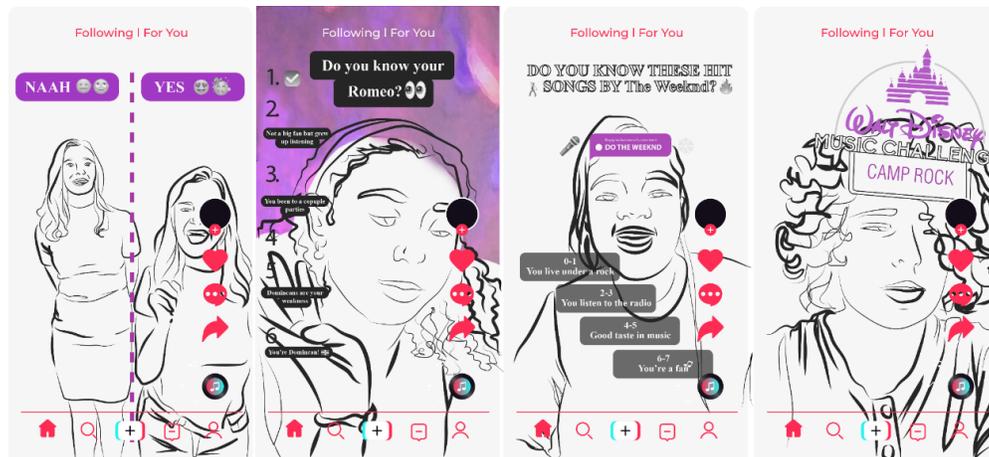
Figure 4. (L–R) 4.1: Know or not know; 4.2: Green screen; 4.3: Comment reaction; 4.4: Singing games.

Stickers as TikToker Mood

Stickers were present throughout all the posts analyzed, appearing either overlaid onto the image, in the caption text (emoji), or in motion (GIF). The emoji collected throughout the analysis (Figure 5) reflected (1) the mood of the TikTokers; (2) the type of music; (3) the feelings generated by the songs or coperformers; (4) the structure of the challenge itself; and (5) the positionality of the TikTokers in or about a group. Particularly noteworthy were the check emoji (identifying a song playlist), the facial expression emoji (laughing), and emoji referring to instruments or musical elements (microphone, musical note, radio, headphones, guitar, and so on).

Figure 5. Emoji observed in the music challenge studied.

Animation to Achieve the Challenge

Animation code was not outstanding in the music challenges. Throughout the whole sample we found a prevalence of stickers, text, filters, and effects, but illustrated resources, animations, and 3D modeling were rarely used. In Figure 6, we found some posts in which overlay drawings (a line and a triangle) were added onto the video to fulfil a challenge. These drawings were not available as a native in-app feature on the TikTok platform. Thus, based on our observations in the different posts of this challenge, we venture that these drawings were probably added by the TikTokers manually through external software, green screen, or stickers.

Figure 6. (L–R) 6.1: Female TikToker and dotted line pattern; 6.2: Male TikToker and bold line pattern.

Lighting Natural and Everyday

Lighting was not a significant code in music challenges. This visual element was present in all the videos, but not as a central feature. In contrast to the YouTube covers, where lighting played a leading role in the story (e.g., dark scenes to accompany villain stories), on TikTok, everydayness prevailed. That is, in all musical challenges, the lighting was mainly natural (light coming through a window, a lamp, outside).

Speed for Video Editing

Speed was another aspect employed marginally in the music challenges. Although the feature was available in post creation, it was rarely used in the case studies in our corpus. In Figure 7, we found two posts where speed was used at some point in the video for different purposes (L–R): (7.1) speeding up the image to accompany a song; and (7.2) speeding up the image to show the song editing process for hours.
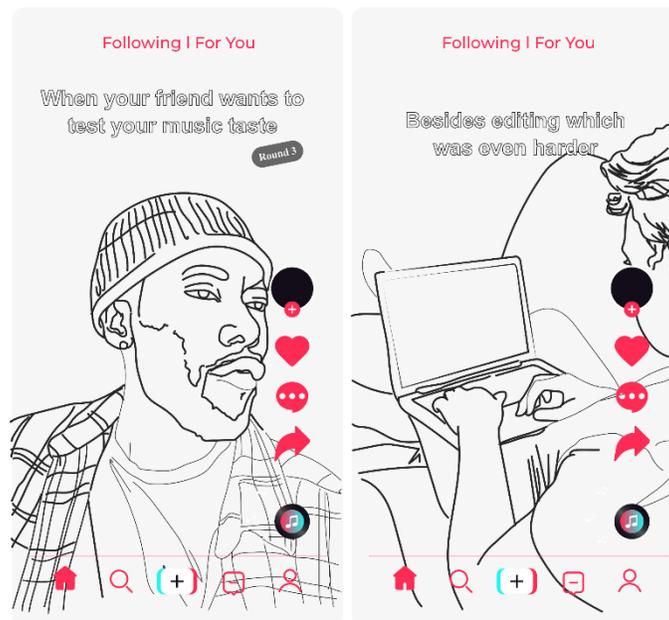
Figure 7. (L–R) 7.1: Accompanying a song; 7.2: Song editing process.

Transitions for Longer Storytelling

Finally, with regard to the image, we analyzed transitions. Although on TikTok this resource is widely used to generate audio memes, in music challenges they were not frequently used. These posts primarily consisted of a TikToker(s) in front of the camera in a fixed scene that did not change. In the few cases where TikTokers did use a transition, the element allowed for longer storytelling about the music experience. For instance, (1) the TikToker used cuts to play different characters (e.g., two friends) dressed and positioned in different places; (2) the TikToker used cuts to follow the rhythm of the song by using different green screens with music player backgrounds; (3) the TikToker used cut-scenes to create an

instructional video-challenge about music notes; and (4) the TikToker showed the whole process of editing a song through cuts.

Audio Codes: Sound Remix

Audio aspects were highlighted throughout the music challenges as the central feature of TikTok. Starting with the performance and music codes, related to audio memes or the use of songs from the label industry, we found that preexisting nondiegetic songs were used more than diegetic audio in the music challenges. As we shall analyze below, in many cases the music challenges based their structure on the remixing of different songs from the same genre or topic. For example, they included: (1) random pop, rock, country, cumbia, ballads, and hip-hop, among other hits; (2) popular songs from the 1960s, 1970s, 1980s, 1990s, and more; (3) random playlists of any genre; and (4) playlists of musical groups or singers such as Lady Gaga, Romeo Santos, High School Musical, and others.

For the voice that consisted of real human sounds, we found a particular feature: In some challenges, the TikToker's voice was played as a diegetic sound source because it was the template of the challenge (e.g., the challenges in which users had to sing the song that appeared in the head effect, as we have observed in Figure 4.4). However, the voice was played via nondiegetic sound over to explain what the challenge was about. For example, we could listen to the beginning of the posts: "Apparently our generation has memorized this song"; "All right, '90s kids, music challenge hard mode"; "Millennial music challenge, collab edition"; or "Music challenge from the 2000s." Silence, by contrast, was another code that was rarely used. In a few seconds of video, the TikTokers prioritized audio, so the use of silences (which appeared in only eight of 150 posts), was mainly because of brief opening and closing spaces to music/sound (introduction and ending).

Finally, in this section we found an equal balance between diegetic and nondiegetic sound. The diegetic mode was especially adapted to the challenges explained by the human voice mentioned above and the nondiegetic mode to the playlists of the record label industry. In other words, the music played a dominant role above the dialogue of the TikTokers themselves.

Text Codes: Emotions and Dialogues

The overlaid text was one of the main elements throughout the music challenges. Through its varied modes, the text was used to perform multiple purposes like in Figure 8 (L-R): (8.1) headlining the challenge using capital letters of forgotten songs; (8.2) telling a scene or story where TikTokers perform the song; (8.3) describing the challenge options creating several scales, such as "You're probably gen X, baby gen Z, older gen Z," and "millennial baybeee"; (8.4) expressing the TikToker's feelings, opinions, or thoughts by using asterisks to express how TikTokers feel during the challenge.
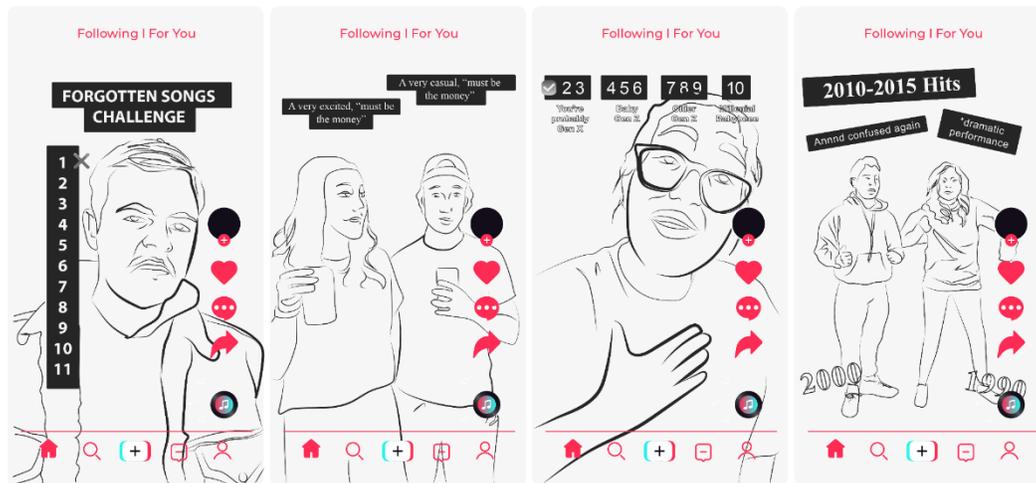
Figure 8. (L–R) 8.1: Headlining; 8.2: Performing; 8.3: Rating; 8.4: Expressing.

Following the same trend as the overlaid text, in the caption entries we found several expressions. This feature was used to explain: (1) Challenge type (e.g., "Country Music Challenge" or "UK Garage Challenge"); (2) Feelings and emotions during the challenge (e.g., "LMFAOOO" or "Just me vibing ✌"); (3) Interaction with users (e.g., "How many did you get? Drop Ur year in the comments" or "if u listen to these bands, can we plz be friends thx"). In terms of hashtags, we found a dynamic of interactions between users to produce and enhance narratives and challenges. As shown in the cloud of hashtags collected during the analysis in Figure 9, the most frequently used hashtags were #MusicChallenge, #ForYou, #FyP, #SongChallenge, #challenge, #ParaTi, #ForYouPage, #music, #viral, #xyxbca, #singing, #trend, #TikTokChallenge, among others. This feature increased the chances of a post to be picked up by the TikTok algorithmic recommendation system (#fyp, #foryourpage, or #xyzbca), to generate a narrative thread of community participation about music (#MusicChallenge, #music, or #SongChallenge), and to add additional personalized information relating to a diversity of demographic categories or interest groups (#hairstylistlife, #emogirls, or #millennial).

Figure 9. Hashtags cloud of the music challenge studied.

Last, the paralanguage—understood as the nonverbal communication consisting of vocalizations (in the case of TikTok, lip-syncing) and other nonverbal qualities of the voice (Kumari & Gangwar, 2018)—revealed similarities and peculiarities. As shown in Figure 10 (L–R): (10.1) enjoyment with expressions of pleasure and smiles when recognizing songs; (10.2) laughter with open mouths and presence of teeth; (10.3) exaggerated dancing and facial expressions such as squinting or overkissing with the lips; (10.4) wide-eyed surprise or exaggeratedly raising their eyebrows, and an overall sense of well-being and happiness were especially noteworthy in the music challenges.
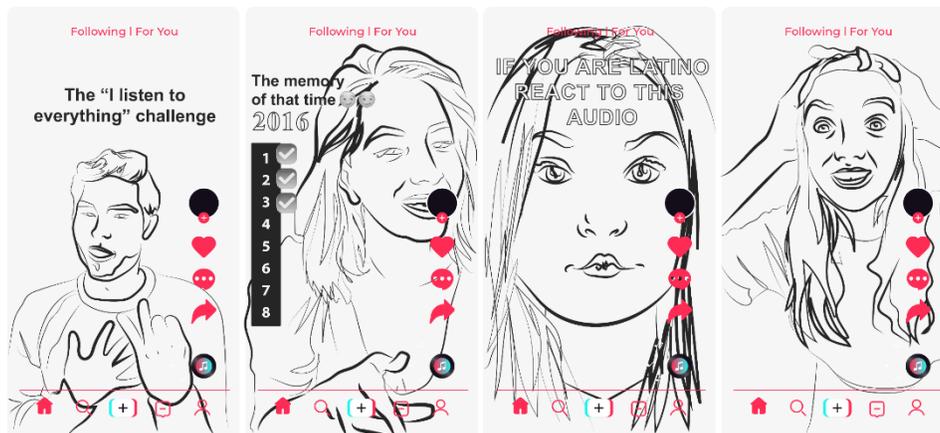
Figure 10. (L–R) 10.1: Enjoying; 10.2: Laughing; 10.3: Exaggerating; 10.4: Surprising.
Storytelling codes: Musical diversity.

Continuing with the storytelling category, in the music challenges we identified the three aesthetic aspects: (1) Syntagmatic, that is, the image to the rhythm of the music through transitions, filters, and more; (2) Kinetic, that is, fitting music/audio with the text sectioning; and (3) Content, that is, the direct reference to the audio/music. The most used was the syntagmatic one, which consists of generating a story thread between clips in music videos. This means that the TikTokers had to convey the different parts of a song through random effects or transitions. Also, because these were challenges that had to be consciously followed, content was another visible element. The kinetic mode, consisting of fitting music with the image, was rarely used. We found only one case in which transitions such as cuts fitted the songs and the reaction of the TikToker. For instance, one TikTok in our study intended to play two characters and distinguished them by occupying either side of the screen, so whenever the song changed, the transition in his position also occurred (Figure 11). Additionally, all TikTokers participated proactively in the challenges, making direct reference to music such as groups, notes, or songs (related to the Content aspect).
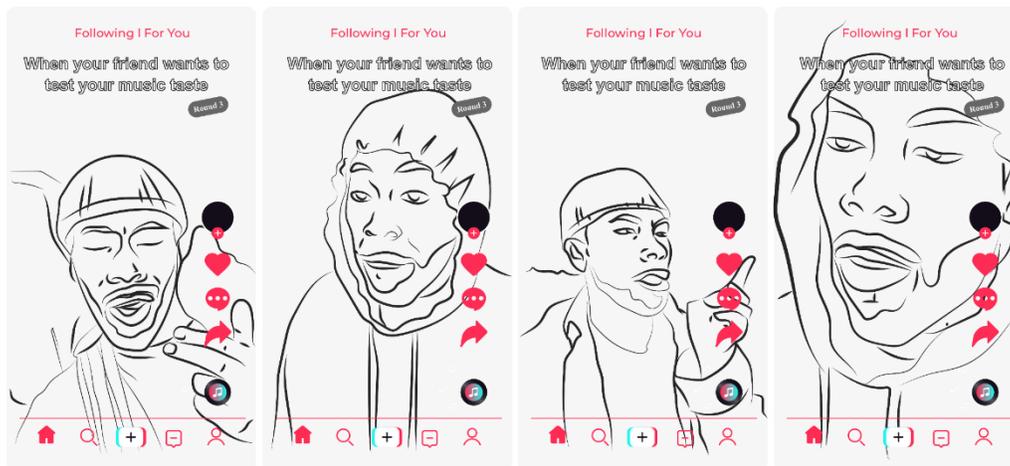
Figure 11. (L−R) 11.1: Left friend sings songs while sleeping; 11.2: Right friend is surprised by his friend's skills; 11.3: Left friend wakes up and keeps singing; 11.4: Right friend uses the zoom to show his disbelieving face.

In terms of topics, we identified a number of patterns across all the music challenges, illustrated in Figure 12 (L−R): (a) nostalgia was particularly important in recognizing songs from another era or from a genre they used to listen to (12.1, challenge for 1980s music lovers); (b) mood also played a major role, because although enjoyment and happiness prevailed, in some cases, depending on the number of songs identified, you could have shown how sad you are (12.2, rating how sad you are); (c) humor was also evident, subject to the exaggerated facial and body language (12.3, revealing the proper, inner self by dancing to songs from the 1990s).

Another topic concerned (d) musical taste, where TikTokers had to demonstrate how much they knew about a genre or a random mashup consisting of songs from different genres (12.4, identifying songs from emo genre); (e) fandom was another main topic, as many of the challenges grouped songs from the same singer, company, or music group throughout the TikTokers had to demonstrate their fan status (12.5, identifying the title of a Demi Lovato song by listening seconds); (f) friendship was also visible in some

posts, where the more songs the user recognized, the more affinity they had with the TikToker (12.6, identifying with a TikToker by number of recognized songs).

An uncommon topic was (g) addiction to the platform, identifying TikTok songs from even its predecessor Musical.ly (12.7, identifying oneself as a TikTok addict by number of recognized songs). We also identified (h) geographic status, closely linked to the cultural code we will see below, whereby TikTokers had to recognize their citizenship (12.8, identifying songs from Turkey); (i) music referring to sexual orientation was also represented in the posts, through listings aimed at the LGBTQ community (12.9, identifying songs used mainly by gays on TikTok during the quarantine period). Finally, we found a focus on (j) expressing musical skills through challenges in which they had to recognize songs in seconds, follow a rhythm with their hands, and so on (12.10, demonstrating a musician's unique skills).
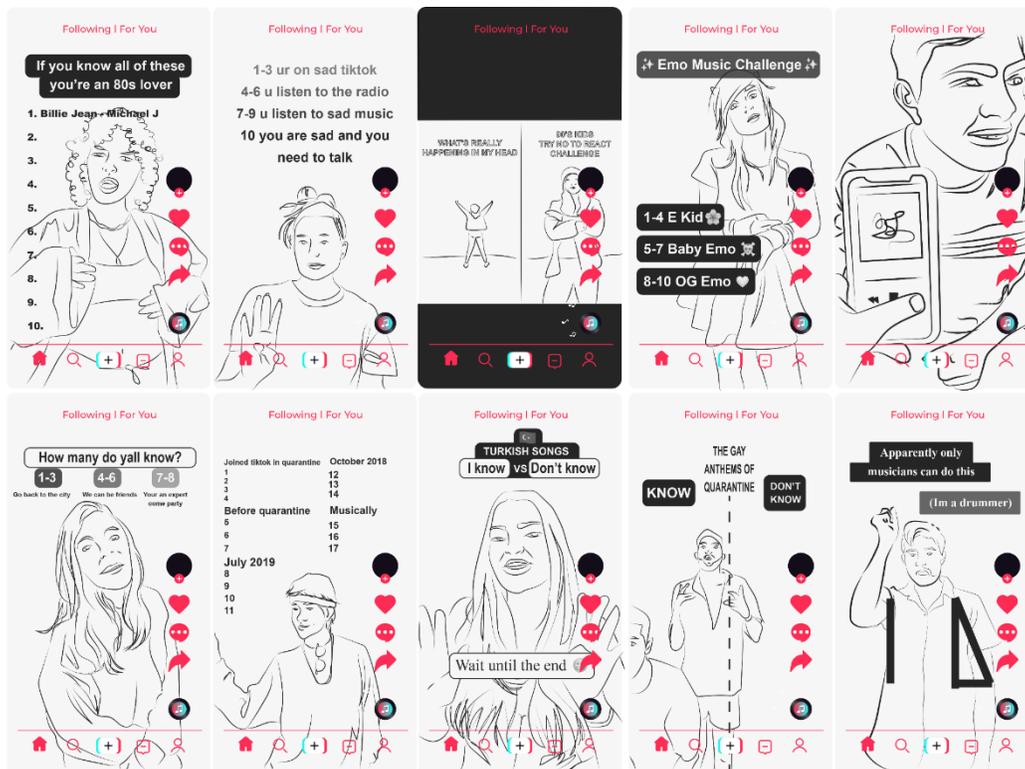
Figure 12. (L–R and T–D) 12.1: Nostalgia; 12.2: Mood; 12.3: Humor; 12.4: Musical taste; 12.5: Fandom; 12.6: Friendship; 12.7: Addiction to TikTok; 12.8: Geographic status; 12.9: Sexual orientation; 12.10: Music skills.

Although these topics referred to different categories, they were identified as thematic patterns that determined the challenge. For example, (1) emotions, which refers to psychophysiological reactions involving adaptive modes of the individual when perceiving an object, person, event, or significant memory (nostalgia, mood, humor); (2) social networks/networked ties, which consist of social structures composed by individuals with one or more defined ties between them (fandom, friendship, musical taste);

(3) critique of TikTok, which comprises a satirical meta-narrative addressed to the platform itself (addiction to the platform); (4) demographic/status features, which consist of the human, sexual, geographic, and demographic conditions under which individuals are identified (citizenship, sexual orientation); and (5) skills, which reflect the abilities learned to carry out an action with optimal results (musician talents). That is, the main motif of the post and the music was to highlight these topics, which were repeated throughout the sample.

With respect to the code assessing the performer's role (i.e., leading or secondary), the TikTokers in our sample appeared mainly in front of the camera, entirely in the middle or close-up, facing the viewer. As shown in Figure 13, the performers danced, lip-synced the songs, and played the lead role in the challenge, always standing at the center of the videos, looking at the viewer/camera. In some cases, more than one TikToker also appeared, but videos featuring individuals were more prominent.
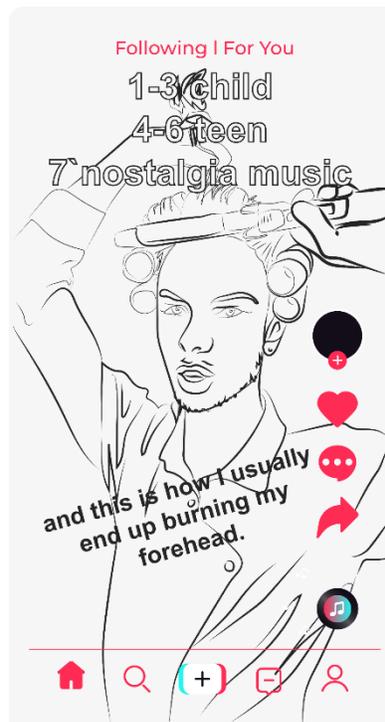
Figure 13. Example of a TikToker in the leading role.

The musical genres identified throughout the analysis were: pop, rock, pop-rock, country, cumbia, dance pop, house, disco, electropop, rock ballad, pop ballad, alternative metal, gothic metal, post-grunge, dark rock, heavy metal, electronic rock, rap, punk rock, pop punk, hip-hop, bachata, reggaeton, glam rock, opera, soul, funk, swing, new jack, rhythm, blues, hard rock, blues rock, glam metal, sleaze rock, RnB, metalcore, hardcore, east coast rap, and gangsta rap. The musical challenges identified are listed in Figure 14.

Recognizing playlists
Recognizing songs from a random list (by genre, by singer, by musical group...).

Checking playlists
Checking the number of songs identified in a list with emoji (✓ ✗).

Comparing musical recognition level
Comparing between two or more TikTokers how many songs each one recognizes.

Recognizing speed
Recognizing songs by listening to the first few seconds.

Checking the fandom level
Rating a user's fandom level according to the number of songs they recognizes by scales.

Remembering/ forgetting songs
Showing how many songs you remember or have forgotten.

Knowing or not knowing a song
Moving to one side or the other of the screen depending on whether or not a song is recognized.

Following the rhythm
Following the rhythm of a song according to a drawing overlaid on the image.

Belonging to a group
Belonging to a group by successfully completing the challenge (e.g. recognizing all the songs of a generation).

Singing songs
Singing songs that appear randomly in a pre-designed effect on the platform.

Testing citizenship
Recognizing songs from a geographical location (British, Turkish, Latin...).

Lowering hand fingers
Keeping your fingers down according to the songs that you recognize.

Listening to any song
Proving that you are able to recognize songs of any genre.

Checking addiction to TikTok
Checking whether you recognize popular TikTok audio memes and your level of addiction (from Musical.ly).

Reacting/not reacting to music
Reacting or not reacting to songs of a genre/geography to show that you are or are not a group member.

Looking for friendship
Finding other users who like the same kind of songs as you, or who have shared some kind of musical taste through scales.

Showing the mood
Expressing feelings and emotions according to the number of songs recognized.

Lip-syncing skillfully
Singing a song lip-sync without missing any words.

Testing musical skill
Identifying musical notes, following musical rhythms, among others.

Figure 14. Type of TikTok music challenges.

Group Affiliation Codes: The Sense of Belonging

For the group affiliation code, we first analyzed the generation category. This characteristic was mainly visible in the challenges over the years. That is, TikTokers shared most often their own birth year to perform the challenges, whether individually or collectively. However, the trend toward the use of years via indication of age was more common in posts involving more than one user (Figure 15.1). We noted in the whole sample an age range from 1960 to 2004. We also found that different users were recurring to 1960s, 1970s, 1990s, Generation X, millennial, and Generation Z generations. Other group affiliation references referred directly to the habits of the country (e.g., Australian parties in Figure 15.2), or to language (e.g., differences in song lyrics between Spanish and English in Figure 15.3).
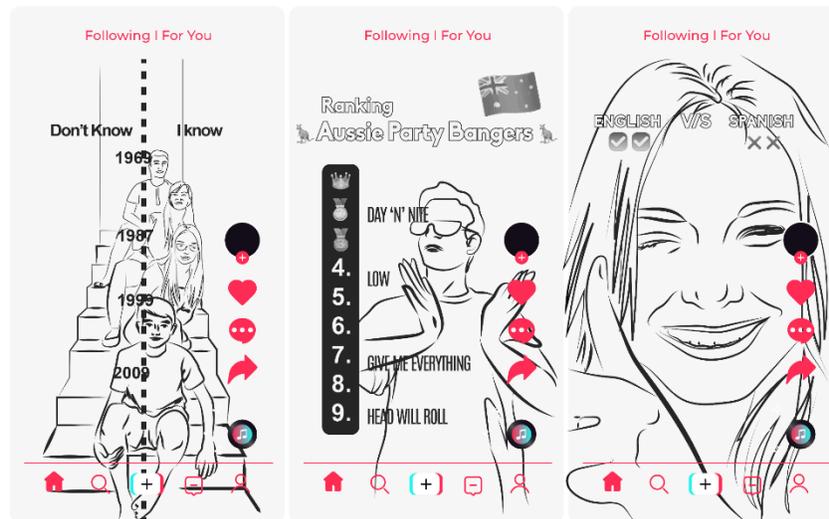
Figure 15. (L–R) 15.1: Age; 15.2: Country; 15.3: Language.

The geographical aspect was emphasized throughout the posts with a sense of belonging tied to music chiefly affiliated or associated with a country, race, or ethnicity. We found this group affiliation strategy in three forms: (1) music from a specific country (e.g., Turkey, Greece, United Kingdom, Brazil, United States, Australia, and so on); (2) musical practices of a country (e.g., which songs Australians will dance to at a party right after the quarantine because of COVID-19); (3) rating the level of citizenship according to the number of known songs (citizenship identity). Language, on the other hand, created groupings around: (1) the lyrics of the song (e.g., songs in Turkish, Greek, Portuguese, Spanish, English, French, and more); (2) the musical language (e.g., notes and rhythms); and (3) the musicians' talents (e.g., "only musicians could complete the challenge" or "create songs only by using the mind"). Finally, musical genre groupings were also related to different patterns: (1) musical taste (adapted to the genre types); (2) musical mood (being sad or happy); (3) sexual orientation (identifying a music group or a playlist as an LGBTQ+ anthem); (4) race and ethnicity; (5) musical addiction (to the TikTok platform). To sum up, we found a set of patterns that answered approximately the research questions, where we identified clear storytelling groupings promoted by transmedia music memes, as we will conclude below.

Conclusions

TikTok music challenges are emerging as audio meme modes of storytelling. As discussed by scholars Ask and Abidin (2017) and Wagener (2019) in their study of memes, the narratives that flow through these audio memes become a game of platform-user interactions, where in-group differences and similarities can be traced. Indeed, TikTok has created a new interactive way of sharing stories, thoughts, feelings, lifestyles, and tastes beyond the egocentric social media structures (Burgette et al., 2021). Although TikTok's platform structure and features have attracted particular scientific interest related to marketing appeal (Haenlein et al., 2020), in this study we emphasize the in-group identity according to the self-narrative concept (Dans, 2015). Specifically, we address musical templates of individual and collective self-expression describing the group affiliation narrative of the TikToker.

The Music Challenge Popularity on TikTok

As we noted throughout the theoretical framework and the analysis, the TikTok challenges recreate a venue for creativity, brainstorming, and memetic entertainment (Zulli & Zulli, 2020). Initially, it all seems like a trivial and competitive game in which statements are proposed through a text overlay, a caption, a hashtag, or a voice-over. However, this interaction model spreads beyond the musical concept and proposes new opportunities for self-expression and engaging storytelling through transmedia music processes (Brembilla, 2019; Vizcaíno-Verdú et al., 2021). Instead of just being opportunities to participate in funny storytelling or lip-syncing, music challenges are functional for learning about and being involved in a trend in which the TikToker can identify with an emotion, skill, social network, or demographic status, among others—an "intimate disposition" (Abidin, 2021, p. 80), so to speak. These performances are based on a "challenge," which is a genre that involves completing a goal, inviting other users to participate, and sharing the content (Kriegel et al., 2021). However, the popularity of the music challenge on TikTok has led to other "transmedia networks" processes (Ruppel, 2012, p. 466) that decentralize its meaning, adapting it to the context, interests, and tastes of each TikToker and community through a single unit form: the audio meme.

Characteristics of a Music Challenge and Its Transmedia Storytelling Mode

Continuing the appeal of the "challenge" genre on TikTok, music has become a connecting thread of storytelling. Transmedia music (Vizcaíno-Verdú et al., 2021), which amplifies preexisting narratives through user-created contents, has moved into TikTok, where music forms emerge to reflect societies' portrayals around the world (Kennedy, 2020). This "informal" music, already found in studies of YouTube, Instagram, Twitter, Spotify, and other platforms (Liikkanen & Salovaara, 2015), has joined the hashtag challenge to create a new interaction and self-expression methodology.

In this sense, the "music challenge" is a game in which the TikToker pursues a music-related goal. In contrast to the hashtag challenge, its musical counterpart is characterized by the leading role of music as a community tie-in, such as when TikTokers promote conversations about the feeling of belonging to a generation, music genre, or age group. Beyond platform-specific features such as image, audio, or text, what makes this trend unique are the in-group story-lines. The TikToker is not satisfied with merely "putting down the fingers," "moving to the left or right of the screen," or dancing. The TikTokers often tell audiences much more about themselves, their cohort, and how they identify with different communities: their birth year, their emotions, their countries of origin or residence, and feelings about these, their childhood experience, their musical genre preferences, their skills as musicians, their sexual orientation and identity, their intercultural romantic relationships, and so much more. Therefore, the music challenge is constituted as a story world of cultural patterns in which individual identities are connected by collective interests (Sidorenko-Bautista et al., 2020).

As we discussed previously, the processes of re-signification and story building—in this case, group affiliations—through small fragments (Georgakopoulou, 2007), and the expression through a single unit, such as the audio meme (Page, 2015), have characterized the music challenge as a transmedia and musical phenomenon. According to studies on transmedia storytelling (Javanshir et al., 2020; Jenkins et al., 2013), usually storytellers could not use music as a transmedia element because it did not contain characters,

universes, or stories themselves. Although some studies have approached this phenomenon on platforms such as YouTube through fictions related to films (Vizcaíno-Verdú et al., 2021), TikTok has facilitated the turning of a musical audio meme into a transmedia asset (Brembilla, 2019) through episodic and creative narrative content.

Likewise, another issue that characterizes music challenges is that the main goal or agenda is to tell a story. That is, in the observed examples, the aim of the TikTokers was not to compete, but to talk about their identity in relation to a digital participation network (Papacharissi, 2019). In popular cases such as song recognition scales of a musical genre or song recognition among different generations, TikTokers openly displayed their personal interests and proudly identified with specific communities who shared similar experiences or interest through the same audio meme.

Types of In-Group Affiliations in Music Challenges

TikTok generates communities that share different group structures. In this context, resymbolizing meaningful identities with and between users (John, 2017) is part of a common interest to spread stories through digital media (Meneghello et al., 2020). For example, we have delved into issues such as geographies, languages, generations, and musical genres that support group self-expression (Bernhard et al., 2006). This aspirational project of belonging to a group is enhanced by trends that challenge people to recognize songs, evaluate the degree of affiliation, or share musical tastes.

The appropriation of TikTok music challenges exceeds the levels of social media activity first identified by Jenkins and colleagues (2015; e.g., viewing, interacting, creating, and disseminating). In this case, the in-group value referring to the countries of origin, languages, generations or preferred musical styles aligns with the "hyper-narrativity"—a concept that represents the hyper-circulation of communicative productions inside and outside the digital sphere through serialized narratives connected by social networks (Wagener, 2019, p. 10). In other words, the TikToker does not merely partake in a popular trend, but also participates, self-expresses, and identifies with a network of like-minded others who share their multiple interest affiliations.

Future Research: TikTok and In-group Affiliations

TikTok's creative content capabilities have led to a popular music challenge trend that, as a hashtag-narrative motif, has identified and connected groups of people from all over the world who share similar cultural interests related to musical genre, language, racial identity, and historical generation, among others. Alongside similar meme trends on TikTok, this movement discovers new avenues for the storytelling understanding of society in social media (Makarov, 2019). Just as technology has changed the musical landscape over the years (Ashbourn, 2020), music and TikTok are now changing the way in-group identities are expressed and made dynamic (Kim & Li, 2021).

Accordingly, this study illustrates a new transmedia music flow strongly linked to in-group identity. Through aspects such as image, audio, text, storytelling, and group affiliation strategies, we provided the basis for a deeper analysis of a musical vernacular phenomenon in which homophily prevails. This is a special

social space and context in which the "For You Page" system is turned into a "For Us Network" that drives and inspires people through music.

References

Abidin, C. (2016). Visibility labour: Engaging with influencers' fashion brands and #OOTD advertorial campaigns on Instagram. *Media International Australia, 161*(1), 86–100. doi:10.1177/1329878X16665177

Abidin, C. (2021). Mapping Internet celebrity on TikTok: Exploring attention economies and visibility labours. *Cultural Science Journal, 12*(1), 77–103. doi:10.5334/csci.140

Ando, H., Cousins, R., & Young, C. (2014). Achieving saturation in thematic analysis: Development and refinement of a codebook. *Comprehensive Psychology, 3*(4), 1–7. doi:10.2466/03.cp.3.4

Ashbourn, J. (2020). *Audio technology, music, and media*. Cham, Switzerland: Springer Nature. doi:10.1007/978-3-030-62429-3

Ask, K., & Abidin, C. (2017). My life is a mess: Self-deprecating relatability and collective identities in the memefication of student issues. *Information, Communication & Society, 21*(6), 834–850. doi:10.1080/1369118X.2018.1437204

Bernhard, H., Fehr, E., & Fischbacher, U. (2006). Group affiliation and altruistic norm enforcement. *The American Economic Review, 96*(2), 217–221. doi:10.1257/000282806777212594

boyd, D. (2010). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papacharissi (Ed.), *Networked self: Identity, community, and culture on social network sites* (pp. 39–58). New York, NY: Routledge.

Brembilla, P. (2019). Transmedia music. The values of music as a transmedia asset. In M. Freeman & R. Rampazzo-Gambarato (Eds.), *The Routledge companion to transmedia studies* (pp. 94–101). New York, NY: Routledge. doi:10.4324/9781351054904

Burgette, J. M., Rankine, J., Culyba, A. J., Chu, K. H., & Carley, K. M. (2021). Best practices for modeling egocentric social network data and health outcomes. *Health Environments Research & Design Journal, 14*(4), 18–34. doi:10.1177/19375867211013772

Choi, D.-H., Nah, S., & Chung, D. S. (2021). Social media as a civic mobilizer: Community storytelling network, social media, and civic engagement in South Korea. *Journal of Broadcasting & Electronic Media, 65*(1), 46–65. doi:10.1080/08838151.2021.1897818

Creswell, J. W., & Creswell, J. D. (2018). *Research design. Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: SAGE Publications.

Dahl, L., Herrera, J., & Wilkerson, C. (2011, May 30–June 1). TweetDreams: Making music with the audience and the world using real-time Twitter data. In *Proceedings of the International Conference on New Interfaces for Musical Expression* (pp. 272–275). Oslo, Norway: NIME'11. Retrieved from https://bit.ly/3qoTnro

Dans, I. (2015). Identidad digital de los adolescentes: La narrativa del yo [Digital identity of adolescents: The storytelling of the self]. *Revista de Estudios e Investigación en Psicología y Educación, 13*, 1–4. http://bit.ly/3jk3MCs

De-Fina, A. (2016). Storytelling and audience reactions in social media. *Language in Society, 45*(4), 473–498. doi:10.1017/S0047404516000051

Feng, Y. L., Chen, C. C., & Wu, S. M. (2019). Evaluation of charm factors of short video user experience using FAHP—A case study of TikTok app. In *IOP conference series materials science and egineering* (pp. 1–5). Hubei, China: IOP Publishing. doi:10.1088/1757-899X/688/5/055068

Georgakopoulou, A. (2007). *Small stories, interaction and identities*. Amsterdam, The Netherlands: John Benjamins.

Glaser, B. G., & Strauss, A. L. (2017). *The discovery of grounded theory. Strategies for qualitative research*. London, UK: Routledge.

Gleason, C., Pavel, A., Liu, X., Carrington, P., Chilton, L. B., & Bigham, J. P. (October 2019). Making memes accessible. In J. P. Bigham, S. Azenkot, & S. K. Kane (Eds.), *ASSETS '19: The 21st international ACM SIGACCESS conference on computers and accessibility* (pp. 367–376). Pittsburgh, PA: ACM. doi:10.1145/3308561.3353792

Haenlein, M., Anadol, E., Farnsworth, T., Hugo, H., Humichen, J., & Welte, D. (2020). Navigating the new era of influencer marketing: How to be successful on Instagram, TikTok, & Co. *California Management Review, 63*(1), 5–25. doi:10.1177/0008125620958166

Harré, R., & Mogbaddam, F. (2003). Introduction: The self and others in traditional psychology and in positioning theory. In R. Harré & F. Mogbaddam (Eds.), *The self and others. Positioning individuals and groups in personal, political, and cultural contexts* (pp. 1–12). London, UK: Praeger Publishers.

Jaramillo-Dent, D., Vizcaíno-Verdú, A., De-Casas-Moreno, P., & Baldallo-González, C. (2020). *Instagramming: Temas, tópicos y tendencias* [Instagramming: Themes, topics and trends]. Barcelona, Spain: Octaedro.

Javanshir, R., Carroll, B., & Millard, D. (2020). Structural patterns for transmedia storytelling. *PLoS ONE, 15*(1), 1–45. doi:10.1371/journal.pone.0225910

Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York, NY: New York Press.

Jenkins, H., Ford, S., & Green, J. (2013). *Spreadable media: Creating value and meaning in a networked culture*. New York, NY: New York Press.

Jenkins, H., Ito, M., & boyd, D. (2015). *Participatory culture in a networked era: A conversation on youth, learning, commerce, and politics*. Cambridge, UK: Polity Press.

John, N. A. (2017). *The age of sharing*. Cambridge, UK: Polity Press.

Kennedy, M. (2020). "If the rise of the Tiktok dance and e-girl aesthetic has taught us anything, it's that teenage girls rule the Internet right now": TikTok celebrity, girls and the Cronovarius crisis. *European Journal of Cultural Studies, 23*(6), 1069–1076. doi:10.1177/1367549420945341

Kim, D., & Li, M. (2021). Digital storytelling: Facilitating learning and identity development. *Journal of Computers in Educations, 8*(2), 33–61. doi:10.1007/s40692-020-00170-9

Kriegel, E. R., Lazarevic, B., Athanasian, C. E., & Milanaik, R. L. (2021). TikTok, Tide Pods and Tiger King: Health implications of trends taking over pediatric populations. *Current Opinion in Pediatrics, 33*(1), 170–177. doi:10.1097/MOP.0000000000000989

Kumari, R., & Gangwar, R. (2018). A critical study of digital nonverbal communication in interpersonal and group communication: In context of social media. *International Journal of Communication and Media Studies, 8*(4), 1–12. Retrieved from https://bit.ly/32Lv7JS

Liikkanen, L. A., & Salovaara, A. (2015). Music on YouTube: User engagement with traditional, user-appropriated and derivative videos. *Computers in Human Behavior, 50*, 108–124. doi:10.1016/j.chb.2015.01.067

Lu-Jia, A., Shen, S., Li, D., & Chen, S. (2018). Predicting the implicit and the explicit video popularity in a user generated content site with enhanced social features. *Computer Networks, 140*(20), 112–125. doi:10.1016/j.comnet.2018.05.004

MacQueen, K. M., McLellan, E., Kay, K., & Milstein, B. (1998). Codebook development for team-based qualitative analysis. *Cultural Anthropology Methods, 10*(2), 31–36. doi:10.1177/1525822x980100020301

Makarov, A. (2019, January 16). *500 millones de usuarios activos y subiendo: La historia detrás de TikTok, la red que puso al mundo a bailar [500 million active users and growing: The story behind TikTok, the network that made the world dance]*. Retrieved from https://www.xataka.com/especiales/500-millones-usuarios-activos-subiendo-historia-detras-tik-tok-red-que-puso-al-mundo-a-bailar

Markham, A. (2012). Fabrication as ethical practice. Qualitative inquiry in ambiguous Internet contexts. *Information, Communication & Society, 15*(3), 334–353. doi:10.1080/1369118X.2011.641993

Medina-Serrano, J. C., Papakyriakopoulos, O., & Hegelich, S. (2020, July). Dancing to the Partisan beat: A first analysis of political communication on TikTok. In *12th ACM Conference on Web Science (WebSci '20)* (pp. 257–266). Southampton, UK: ACM. doi:10.1145/3394231.3397916

Meneghello, J., Thompson, N., Lee, K., Wai-Wong, K., & Abu-Salih, B. (2020). Unlocking social media and user generated content as a data source for knowledge management. *International Journal of Knowledge Management, 16*(1), 101–121. doi:10.4018/IJKM.2020010105

Olivares-García, F. J., & Méndez-Majuelos, M. I. (2020). Analysis of the main trends published on TikTok during the quarantine period by COVID-19. *Revista Española de Comunicación en Salud, 1*, 243–252. doi:10.20318/recs.2020.5422

Omar, B., & Dequan, W. (2020). Watch, share or create: The influence of personality traits and user motivation on TikTok mobile video usage. *International Journal of Interactive Mobile Technologies, 14*(4), 121–137. doi:10.3991/ijim.v14i04.12429

Page, R. (2015). The narrative dimensions of social media storytelling. Options for linearity and tellership. In A. De-Fina & A. Georgakopoulou (Eds.), *The handbook of narrative analysis* (pp. 329–347). Chichester, UK: John Wiley & Sons. doi:10.1002/9781118458204.ch17

Papacharissi, Z. (2019). Introduction. In Z. Papacharissi (Ed.), *A networked self and birth, life, death* (pp. 1–10). New York, NY: Routledge.

Roberts, K., Dowel, A., & Nie, J.-B. (2019). Attempting rigour and replicability in thematic analysis of qualitative research data; A case study of codebook development. *BMC Medical Research Methodology, 19*(66), 1–8. doi:10.1186/s12874-019-0707-y

Ruppel, M. (2012). *Visualizing transmedia networks: Links, paths and peripheries* (PhD thesis). University of Maryland, College Park, MD.

Sedeño-Valdellós, A., Rodríguez-López, J., & Roger-Acuña, S. (2016). The post-television music video. A methodological proposal and aesthetic analysis. *Revista Latina de Comunicación Social, 71*, 332–348. doi:10.4185/RLCS-2016-1098

SensorTower. (2020). *The top mobile apps, games, and publishers of Q3 2020: Sensor Tower's Data Digest* (Sensor Tower Quarterly Reports). Retrieved from https://go.sensortower.com/q3-2020-data-digest-report.html?utm_source=blog&utm_medium=blog&utm_content=q3-2020-dd&utm_campaign=TECH-CT-Q3-2020-DataDigest

Sidorenko-Bautista, P., Herranz-de-la-Casa, J. M., & Cantero-de-Julián, J. I. (2020, May 20). Use of new narratives for COVID-19 reporting: From 360º videos to ephemeral TikTok videos in online media. *Trípodos, 47*(1), 105–122. Retrieved from https://bit.ly/3aARBgK

Tiidenberg, K. (2018). Research ethics, vulnerability, and trust on the internet. In J. Hunsinger, M. M. Allen, & L. Klastrup (Eds.), *Second international handbook of Internet research* (pp. 569–583). Amsterdam, The Netherlands: Springer. doi:10.1007/978-94-024-1202-4_55-1

TikTok. (2021). *TikTok creation essentials*. Retrieved from http://bit.ly/377xxlo

Vizcaíno-Verdú, A., Aguaded, I., & Contreras-Pulido, P. (2021). Understanding transmedia music on YouTube through Disney storytelling. *Sustainability, 13*(7), 1–17. doi:10.3390/su13073667

Wang, Y. H., Gu, T. J., & Wang, S. Y. (2019). Causes and characteristics of short video platform Internet community taking the TikTok short video application as an example. In *6th IEEE international conference on consumer electronics* (pp. 1–7). Taipei, Taiwan: Institute of Electrical and Electronics Engineers Inc.

Wagener, A. (2019). Hypernarrativity, storytelling, and the relativity of truth: Digital semiotics of communication and interaction. *Postdigital Science and Education, 2*(2), 147–169. doi:10.1007/s42438-019-00066-7

Xu, L., Yan, X., & Zhang, N. (2019). Research on the causes of the "TikTok" app becoming popular and the existing problems. *Journal of Advanced Management Science, 7*(2), 59–63. doi:10.18178/joams.7.2.59-63

Zappavigna, M., & Martin, J. R. (2018). #Communing affiliation: Social tagging as a resource for aligning around values in social media. *Discourse, Context & Media, 22*, 4–12. doi:10.1016/j.dcm.2017.08.001

Zeng, J., Schäfer, M. S., & Allgaier, J. (2021). Reposting 'till Albert Einstein is TikTok famous': The memetic construction of science on TikTok. *International Journal of Communication, 15*, 1–32. Retrieved from https://ijoc.org/index.php/ijoc/article/view/14547

Zulli, D., & Zulli, D. J. (2020). Extending the Internet meme: Conceptualizing technological mimesis and imitation publics on the TikTok platform. *New Media & Society*. doi:10.1177/1461444820983603