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Music on YouTube: User engagement with traditional, user-appropriated and derivative videos

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ABSTRACT

YouTube is the leading Internet video service and one of the most popular websites in 2014. Music videos hold top positions in different YouTube charts, but the music video types or engagement patterns with them have not been systematically studied. In this paper we present three studies that focus on YouTube music. We first show that music videos are the most popular content genre in YouTube. We then present a typology of traditional and user-generated music videos discovered in YouTube. It includes twelve subtypes of music videos under three main types: traditional, user-appropriated, and derivative. Last, we present findings on user engagement statistics that go beyond view, comment, and vote counts. These metrics show that while music videos gather more views, engagement differences with other content genres are miniscule. However, there are notable differences in engagement between different music video types. This is prominent between different artists on one hand, and between traditional and user-generated videos on the other. We synthesize these findings by discussing the importance of user-generated videos in YouTube's music ecosystem.

1. Introduction

Watching videos has become one of the most popular activities in the Internet. According to ComScore, 1.3 billion people watched online videos in 2013, viewing on average 162 videos every month (ComScore, 2013). YouTube is currently the most popular video service and the third most popular Internet service overall according to Alexa.com (November, 2013). YouTube was used by at least 758 million users around the world every month, with each visitor watching 79 videos on average each month (ComScore, 2013).

One of the reasons for YouTube's success may be in music content, which has a prominent place in the service. In 2013, YouTube was the most recognized digital music brand (IFPI, 2014). 38.4% of YouTube's traffic relates to music (ComScore, 2013) and 23–30% of its videos bear the "Music" categorization (Cheng, Dale, & Liu, 2007; Gill, Arlitt, Li, & Mahanti, 2007). Academic research also indirectly acknowledges the importance of music among the different types of content (Broxton, Interian, Vaver, & Wattenhofer, 2013; Burgess & Green, 2009; Cunningham & Nichols, 2008).

However, although music enjoys vast popularity in computer-related behaviors, it remains an underinvestigated topic. There are studies on music and media consumption patterns (Baur, Büttgen, & Butz, 2012; Sease & McDonald, 2011; Voida, Grinter, Ducheneaut, Edwards, & Newman, 2005) and on music information retrieval (Cunningham & Masoodian, 2007; Cunningham, Reeves, & Britland, 2003; Downie, 2003), but, to our knowledge, two topics have remained unaddressed in academic research. Despite YouTube's prominent role in music industry, research has not quantified the importance of music listening in YouTube in comparison to other content genres. Second, it remains unknown whether there are differences in viewing and listening patterns between music and other content genres on one hand and between different types of music videos on the other. Given YouTube's position as the most recognized digital music brand, and music's prominence in the service, we find that these two unaddressed topics deserve more attention. Our study is one of the first studies in this area. With these analyses, the picture about online music listening and watching can be sharpened.

Our paper analyses the most popular cases of music interaction in YouTube with a specific focus on users' *interactions with recorded music*. Our research approach is *music first*, that is, we consider videos primarily through their audio content. We look for answers to the following research questions:

(RQ1) *How popular is music in comparison to other genres on YouTube?*

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(RQ2) *What are the types of music content on YouTube?*
(RQ3) *How do users engage with YouTube videos across different genres and different music video types?*

We present three studies utilizing both qualitative and quantitative methods. Overall we find that users have extensively *appropriated* YouTube for music use. In YouTube context, our notion of user appropriation refers both to the re-invention of a technology's purpose of use by its users and the claims for ownership and control of its use (e.g., Eglash, 2004; Mackay & Gillespie, 1992). In YouTube, users continuously take control of original video content and re-use it to create their own video versions. Therefore, from re-invention point of view, users have created a music-first, audio-oriented "video" formats inside YouTube that support music listening.

The contributions of this paper are three-fold. First, given the constant change of digital music consumption, we provide a historical snapshot of music interaction with recorded music on YouTube in 2013–2014. This reveals the importance of music among YouTube's content categories. Second, we show that the music content in YouTube needs to be considered bearing in mind its sub-types, since the users' interaction patterns between the subtypes differ significantly. Third, our results suggest that the adoption of YouTube for music interaction has been facilitated by a phenomenon that we call the "halo effect." It explains how user-created videos surround and flourish next to original, professionally-created music video releases. We present our findings in three empirical sections after the following background section. With this pioneering exploration, we hope to open up new research questions for studies of music interaction and fuel discussion about the role of "users" in professional media production and distribution in the 21st century.

2. YouTube and music

YouTube was founded in 2005 and acquired by Google in 2006. YouTube started with the intention of allowing regular users to publish their videos, but it has gradually developed into a professional media outlet, mixing free and subscribed content on an advertising-friendly platform (Burgess & Green, 2009; Kim, 2012). Currently it delivers prominently professionally generated content (Kim, 2012). It is also common for users to upload copies of professional content, i.e. user-copied content (Ding et al., 2011). This collective effort creates multiple, not necessarily totally identical copies of the original professional content (De Oliveira, Cherubini, & Oliver, 2010), sometimes appearing months after the original release (Cha, Kwak, Rodriguez, Ahn, & Moon, 2007), only to disappear later (Prellwitz & Nelson, 2011).

Over the past nine years, YouTube's popularity has reached huge proportions. YouTube has announced that 100 hours of video are being uploaded to its service every hour and that its Content ID for tracking copyrighted material has been used on over 200 million videos (YouTube, 2013a). However, the total number of videos has not been publicly disclosed. An academic study from late 2010 estimated the number to be 448 million (Ding et al., 2011). YouTube user EducateTube.com estimates that almost 3 billion videos had been uploaded by late 2012.[1] Considering the wealth of user-generated, non-copyrighted material that does not have a Content ID, it is likely that there are over one billion videos in the service. This means that any data about YouTube is bound to be "big" in volume and velocity (Stonebaker, 2012), and challenging in terms of sampling (see Blythe & Cairns, 2009).

[1] Video "How many videos are on YouTube?" by EducateTube.com (http://www.youtube.com/watch?v=jpYCUn22l-E), accessed 13th November 2013.

2.1. The YouTube user interface

YouTube's user interface influences the kind of experiences people can attain from it (Blythe & Cairns, 2009; Buie & Blythe, 2013). Knowledge of the present YouTube interface is central for understanding the research results thus we describe it here.

The viewing experience is centered around the web interface and the video player page. Parallel, alternative interfaces for mobile devices are also available (i.e., mobile applications and a mobile web site). YouTube video entries have two facets, *media* (video, thumbnail, and title) and *basic statistics*, that are consistently presented together. Fig. 1 shows the appearance of the "desktop" browser based video player in late 2013.

The primary component of the page is Player. Using the *Player* to watch content, user can pause the playback, choose a resolution, change volume, and jump to a different point in time. When the video finishes, user input is required to continue watching. Registered users can save playlists, which enables them to playback multiple videos sequentially. Registration is also required for viewing any rated content. Advertisements of 5–30 s may be embedded in the beginning. The existence and content of ads, and the video access depends on the user's region.

In addition to the Player, the user interface has four other main components: Search bar, Suggested content column, Metadata and voting controls, and Comments area. The Search bar allows users to perform keyword-based queries. The results are delivered on a separate Search results view. Search results can be filtered according to several criteria. Suggested content column, filled by recommended videos and advertisements, is to the right of the other components.

Metadata and voting controls reside right below the Search bar. They include both the description provided by the uploader and the basic viewing statistics. The number of total views is the central gauge of popularity in YouTube, appearing systematically next to the videos in search results and other listings. The space below is dedicated for the number of user votes (i.e., the count of thumbs-up and thumbs-down) and a bar visualizing their balance. In addition to basic statistics, YouTube collects detailed Analytics data. The uploader can make some of these extended statistics visible below the basic statistics.

Logged-in users can rate the video by voting thumbs-up or thumbs-down and subscribe to the uploader's *channel* to receive updates about activity on the channel. Channel subscription is therefore an important measure of user engagement as it reflects a sustained interest in the channel (Tang, Gu, & Andrew, 2012). The final section is the Comments area populated by input from logged-in users.

2.2. Literature on music use of YouTube

In order to support our claim of lack of prior work and to justify our choice of methods, we present a review of the essential literature.

The academic interest in YouTube is in a steady a rise. A citation report from Thomson Reuters Web of Science (May 2014) for publications including "YouTube" as their title ($N = 492$ by 2014) shows a linear increasing trend every year since 2006, with over 100 papers recorded for 2013. The majority of the papers are from medical journals and they typically assess medical information or health phenomena in YouTube videos (see, e.g., Lewis, Heath, St. Denis, & Noble, 2011; Steinberg et al., 2010). Content analysis has also been practiced in human–computer interaction studies. Blythe and Cairns (2009) pioneered this work by analyzing YouTube videos to understand the portrayals of iPhone 3G. They used content analysis to categorize hundred videos into seven categories (e.g., review, reportage, unboxing, and demonstration).