

TAGGING BEHAVIOR IN TUTORIALS ON YOUTUBE: A CASE STUDY APPROACH

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ABSTRACT. This paper discusses the tagging techniques used by the owner of a popular YouTube channel that prides himself with creating tutorials in many domains. In the context of the rising self-help movement, it examines the relationships between these descriptive keywords, other fields that might help attract viewers, such as title or featured image, and the actual content of the videos. A corpus of over three hundred video materials was taken into consideration with this purpose. The study finds that when adding tags, the user visibly prefers certain parts of speech over others. Furthermore, tags, title and images are generally strongly correlated, but the content either lacks most of the terms mentioned in them or represents them by other means.

Keywords: YouTube, tag, tutorial

Introduction

According to the website's statistics, there are over a million YouTube users, coming from more than thirty countries that make money from their videos at the moment. Given these figures, there is no wonder why so many people struggle to make their content as visible as possible through various means. The same statistics show that approximately one hundred hours of video are uploaded on the platform every minute and millions of subscriptions happen daily.

However, it is extremely easy to get lost in that endless ocean of videos. As highlighted by Cha and his colleagues, popularity on YouTube is measured in views, and following a power law, the majority of users keep watching the same few popular videos (Cha et al., 2007, in Greenaway, Thelwall & Ding, 2009), making others obsolete.

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David Cullen observed that there are a few types of videos that attract more visitors, and in most of the cases their creators did not even put much effort in making them (Cullen, 2014). One of the categories that he identified as successful comprises how to's and tutorials. Cullen also mentioned that for such content to draw the attention it is enough to remain consistent with posting, use quality tags and titles, remarking that poor quality image is no longer an obstacle (Cullen, 2014). Nonetheless, he pointed out that many creators of such content may as well be charlatans, relying on the rise of the self-help culture. Whether they look for make-up tutorials, or try to find out how to cook their favorite dish, people tend to get informed from such videos, as they are in fact interested in doing as many things themselves, in order to save money and time. Consequently, following Cullen's idea, this study looks at the tagging behavior of a creator of tutorials that has managed to draw the attention of many.

Background

As Greenaway and his colleagues also noticed, tagging is a helpful tool for labeling online resources, whether they are web pages or images and videos (Greenaway, Thelwall & Ding, 2009). Therefore, a definition of the concept is necessary before going any further. According to Paul Anderson, "a tag is a keyword that is added to a digital object [...] to describe it" (Anderson, 2007, p. 9). Furthermore, an indispensable completion for this description comes from Marcel Danesi's "Dictionary of Media and Communications", which defines the term as a "piece of data that can be used to facilitate retrieval of text" (Danesi, 2009, p. 283). Therefore, the purpose of using tags is to create a relatively short description of the content that will facilitate the search process.

Before going any further, it is essential to mention that the tags allocated to the media texts on YouTube are not usually visible to the viewers². Consequently, they are in fact used for increasing findability³, as also shown in an analysis on tagging motivation performed by Marlow and other researchers (Marlow et al., 2006, in Greenaway, Thelwall & Ding, 2009).

² In 2012 YouTube disabled tags to the public, justifying that this decision would help improve search quality and would decrease the amount of algorithm abuses (Luo, 2012).

³ Findability refers to the ease with which information from a website can be found, both by using search engines or simply searching on the website (Jacob & Loehrlein, 2009).

Nevertheless, given that YouTube only allows the owners of the videos to add tags to them, they have complete control over how they choose to describe the content with the use of some keywords. This means that they are able to add any tag, although there might be no connection between it and the actual content of the media text it is associated with, hence the probability of leading people to unwanted results. An illustrative example in this sense would be the controversy created by the phenomenon called "The Reply Girls", who used a series of methods to increase their chances to get listed in the recommended section of popular videos at the time. One of the techniques they used was copying the tags of particular videos and adding them to their own content (Luo, 2012).

Another potential problem with tags was mentioned by Golder and Huberman, who claimed that the free from nature of these descriptors is a huge issue (Golder & Huberman, 2006, in Greenaway, Thelwall & Ding, 2009). As a pre-defined, controlled vocabulary is not present on YouTube, a multitude of different spellings, plural forms, dialects and foreign languages can be encountered and these can create confusion during the search processes.

Further on, in a study about the usefulness of tags conducted in 2009, Greenaway and his colleagues concluded that the tags added by YouTube users have the role of an extension of the title and description fields (Greenaway, Thelwall & Ding, 2009). The researchers also observed that tags are no longer used to categorize a video, users preferring to rely on the classification structure already offered by YouTube.

In the same study, the researchers worked with some categories for an easier classification of the tags. Originally established by Angus et. al in an analysis made in 2008 and used for a study on Flickr tags, they adapted the same classification for YouTube and presented it as it follows:

1. Generic relationship between tag and video content (e.g. a video of a cat contains the tags "cat" or "animal");
2. Specific relationship between tag and video content (e.g. a video of Grumpy Cat has tags such as "grumpy cat", not just "cat");
3. Tag only useful to a minority of users, specific individual or group (e.g. a video uploaded by Grumpy Cat's owner containing a tag with the individual's name);
4. Irrelevant / Non-Useful tags (e.g. "a", "cat", "ruined", "my", "Christmas", "tree", "this", "year").

The researchers also divided them into subcategories, for a deeper and more conclusive analysis to be possible. In addition, the examples given for each category were personalized for this paper only.

Halvey and Keane realized a study on YouTube and found that the more descriptive information is provided for a video, the more views it attracts, because text matching methods are used by search engines when seeking for such material (Halvey & Keane, 2007, in Greenaway, Thelwall & Ding, 2009). By the same token, as tags are in fact keywords, the number of visualizations a video has should, at least in theory, grow directly proportional to the number of tags introduced.

HowToBasic or how to become popular on YouTube with basic resources

HowToBasic is a three years old YouTube channel that can be easily described as popular in accordance with the number of views gathered by its videos and the speed at which this happens. Having reached over 4 million subscribers (more specifically, 4.269.511) and almost 6 hundred million channel views (more specifically, 571.838.202) since its release, a considerable amount of its videos attained millions of visualizations each.

Research Design

The purpose of the current study is to find out which are the types of tags used by the channel owner and how are they linked to the content and other aspects, that they help attract viewers at such speed and reach success so easy on the Internet. Without implying that the methods considered in this study are the only ones that lead to success on YouTube, three research questions have been guiding the analysis:

RQ1: What fields do the tips and tricks presented in the videos belong to most often?

RQ2: What types⁴ of tags are added to the videos most frequently?

RQ3: How much⁵ are the tags related to the titles, featured images and the actual content of the videos?

⁴ Types of tags refer to the types of parts of speech associated with the videos.

⁵ In order to quantify this relationship percentages are used.

Methodology

In order to find the answers to these research questions, the YouTube channel of the user HowToBasic was content analyzed both quantitatively and qualitatively. All the videos submitted since the channel was created, on December 8th 2011, and until December 14th 2014, were included in this research. A total amount of 362 materials, all added in the pre-defined YouTube category Howto & Style, for each of them a series of fields were extracted in order to be analyzed. The aspects taken into account for every piece are: title, number of views and tags.

Quantitative content analysis was performed first. After all the data was gathered and without being watched, the videos were classified into seven categories according to their titles. Thus, the materials posted on the channel offer tips and tricks in the following domains:

1. Cooking⁶: videos describing recipes for food and beverages;
2. Skills: videos referring to a variety of practical or artistic skills that one could gain after watching them;
3. Health & Beauty: videos presenting illness cures, personal hygiene or beauty tips;
4. Sex & Relationships: videos implying pieces of advice about how one should behave in relation with others, be them family or friends;
5. Home & Living: videos referring to tips and tricks that could be useful in any household;
6. Science & IT: videos containing instructions for the efficient usage of devices and applications that are very popular nowadays;
7. Conceptual Skills: videos illustrating actions that are more abstract and less realizable in their nature, but they are, however, intensely discussed.

Regarding the tags, they were seen with the help of a Google Chrome extension⁷, which also offered the possibility of obtaining other useful information that is not publicly displayed by YouTube by default, such as the number of Facebook comments, likes and shares, Tweets or Google+1's. After being extracted and gathered, their types and frequency were examined using text analysis software⁸.

⁶ Although cooking is also a skill, it was taken as a separate category due to the large numbers of videos referring to it.

⁷ The extension is called vidIQ basic.

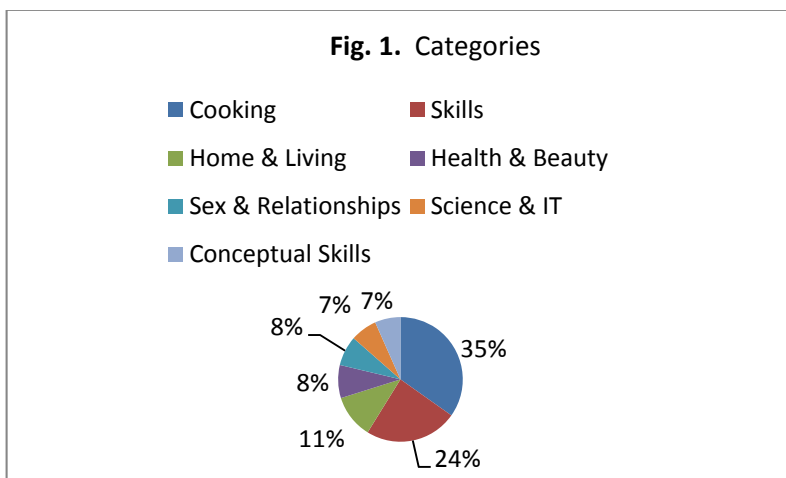
⁸ While analyzing the tags with the use of Tropes, the accuracy of the results indicating the frequency was double checked using http://www.writewords.org.uk/word_count.asp

Additionally, qualitative content analysis was performed on seven videos. To be more specific, the media texts comprised were the first videos, according to the number of visualizations, from each previously established category. The purpose of the qualitative study was to see if they actually contain something that is mentioned in the title, tags or appears in the featured photo. Inspired from Greenaway’s previously mentioned tag classification, ratings (in percentages) representing the closeness of the relationships between the aforementioned aspects were awarded to each of the seven videos. Starting with the assumption that the most viewed seven videos might not coincide with those selected for the study, the decision of selecting the sample this way might lead to even more thought-provoking results. The unit of the analysis was the video.

Quantitative findings

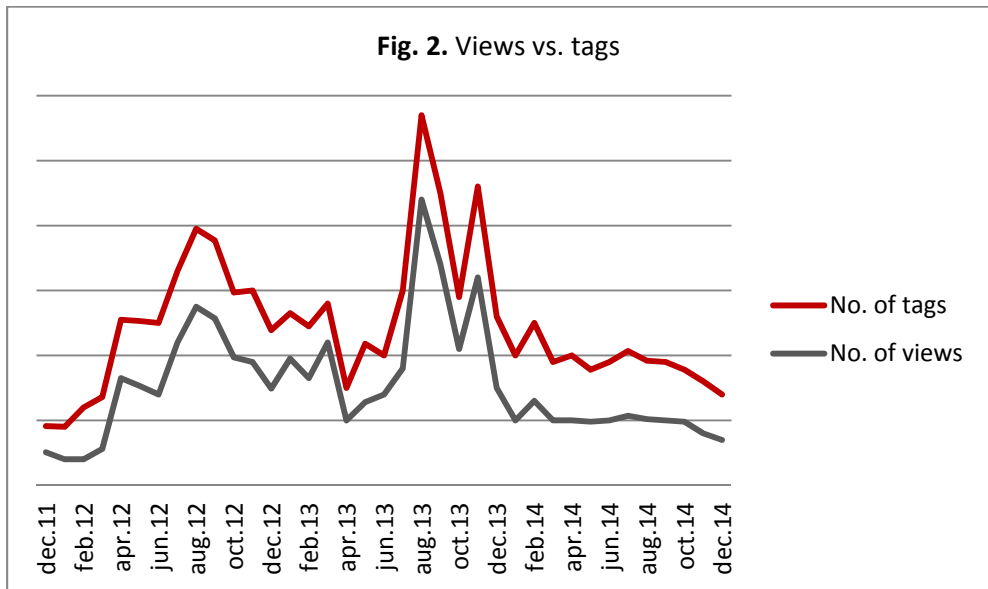
At first, quantitative content analysis was performed on the entire content of the channel, with the purpose of creating a foundation and of sketching some general directions to be followed in a more in depth further study.

The fact that the YouTube user has been very consistent with posting is more than obvious given that he uploaded, in average, a new video every three days in a period of three years. Regarding RQ1, the results of the data analysis show that the 362 videos fall into the previously established categories as is follows:

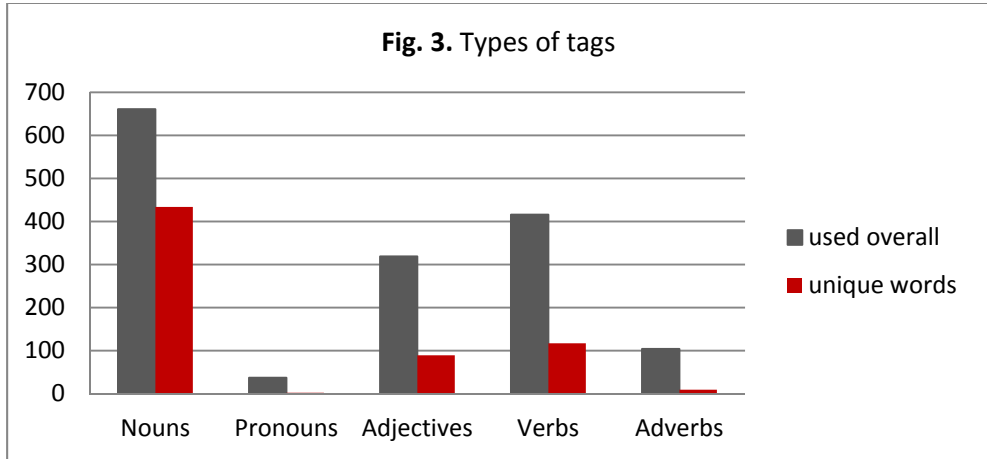


There are visible differences in the number of videos each category contains (Fig. 1). Most of the videos refer to cooking, more than a hundred being included in this category. The second one, Skills, is very close in terms of the number of videos it comprises, with eighty-seven pieces in it. Home & Living encompasses only forty-one materials, while Health & Beauty and Sex & Relationships have thirty-one and twenty-eight respectively. Twenty-five videos fall into Science & IT, followed by Conceptual Skills which is one video shorter.

Concerning the tags, it can be observed that when their number increases, the videos have more views as well (Fig. 2). This correlation shows that the tags indeed play a significant role in boosting up the number of visualizations, so the way in which they are used is relevant and the patterns followed might explain the author's success.



Therefore, as to RQ2, the most often used parts of speech are nouns, verbs and adjectives, but adverbs and pronouns were also encountered. However, the numbers are not proportional, and substantial differences between the numbers of times certain parts of speech were used can be observed (Fig. 3).



Although nouns are the most used, more than half of them only appear once and this can be explained by the fact that a considerable amount refer to dishes (e.g. “cheesecake”) and ingredients (e.g. “eggs”). The most often encountered noun is “recipe”, appearing a hundred and fifty-four times, while the other frequently met nouns are “method”, “technique” or “tutorial”. Some are names of popular brands (e.g. “McDonald’s”, “Subway”), but names of celebrities also appear (e.g. “Miley Cyrus”).

Moving on to the verbs, about 80% of them describe an action (e.g. “make”, “get”, “cook”). The most frequently used one falls into this category, more specifically “make”, being present a hundred and seven times. There are very few verbs that describe states of being that were associated with videos (e.g. “be” used in the tag “how to be homo”).

Regarding the adjectives, although they were not met as much as nouns or verbs overall, the ones that were used were also repeated quite frequently and there is equilibrium between the numbers of times they appeared. Possessive adjectives (e.g. “my”, “your”) were also encountered on an ordinary basis. Some of the most commonly met adjectives overall are “homemade”, “healthy”, and “funny”.

Similarly, although not many unique adverbs were used while tagging, their frequency was constant. All of them are adverbs of manner, (e.g. “fast”, “correctly”, “quickly”) therefore describing how to do something rather than when and where to do it (like adverbs of time and place would).

Concerning the pronouns met, this happened less often, only two such parts of speech appearing. Indefinite pronoun “someone” is the most predominant, followed by second person singular personal pronoun “you”.

Other parts of speech such as articles, prepositions or conjunctions were also encountered although rarely, but they were excluded from the analysis, as Greenaway and his colleagues described such tags as being irrelevant/ non-useful. By the same token, interrogative manner adverb “how” was excluded from the study as well, because by using it in connection with the preposition ‘to’, basically the owner tagged the videos with a part of the channel’s name and this happened in 90% of the cases.

The average number of tags⁹ used for a video is nine, the lowest number of tags being three, while the highest is twenty-one. Contradicting Halvey and Keane’s point, the video having the most tags is not also the most popular one.

Qualitative findings

While the quantitative analysis offered some solid explanations, the qualitative one has given the answers that were missing. Further on, the categories are presented in ascending order, in conformity with the number of videos they contain.

1. *Cooking*

This category’s most popular video is placed on the third position overall. Having reached over 9 million views, it is entitled “How To Make a Krabby Patty” and the image it features presents a burger with the same name, from the animated cartoon series Sponge Bob. In the video, while actually making an ordinary burger, the man throws around (and even in the toilet bowl) all sorts of non-related ingredients. He also adds other objects, such as tampons, a pregnancy test and Christmas decorations in a bowl and mixes them, first by hand and then with the help of a blender. Eventually, the mixture lands on the burger, along with a CD containing episodes of Sponge Bob.

The picture displayed is perfectly related to title and the tags (e.g. “krabby patty”, “recipe”). However, the content of the video somehow diverges from the topic. Although an actual burger is made, the other ingredients are totally random. Given that this type of burger was made known because of the cartoon series first, it can contain anything, even objects, as the channel owner seems to think. The aspects match in proportion of 80%.

⁹ The average was calculated with the help of
<http://www.usingenglish.com/resources/text-statistics.php>

2. Skills

The most viewed video in this category is also the second most viewed overall, having attained over 13 million visualizations. Entitled "How To Twerk Like Miley Cyrus", the featured image shows the culminant moment of Miley's 2013 VMA performance, alongside Robin Thicke. However, the video first presents a twerking Barbie doll, then a headless dead chicken with the singer's picture replacing the top part of the body, "twerking" near a picture of Robin Thicke. An egg is randomly smashed in the end.

The featured image, the title and the tags (e.g. "twerking", "Miley Cyrus", "VMA") are in concordance. In spite of that, the video is far from presenting a tutorial that would help its viewers gain dancing skills. The author is mocking the female singer, associating her with a chicken. In this case, 50% of the aspects match.

3. Home & Living

This category's most popular video is not even in top 100 overall, but it has more than a million and a half views. Named "How To Turn on a TV", its featured image contains such an electronic device. The short video tutorial depicts a man turning on a TV with the help of a remote control.

The title, the tags, the photo and even the action in the video are related to each other. Nonetheless, some of the attached keywords do not correspond with what is shown. The tags "without" and "touching" are just tricky, as the man touches the remote control with his hand. The aspects match in proportion of 90%.

4. Health & Beauty

Positioned eighth overall, the most visualized video in this category reached almost 7 million views. Entitled "How To Insert a Tampon", the featured photo depicts the lower part of a woman's body, while she's holding a tampon in her hand. The action of the video is, however, located in the kitchen. The man, wearing rubber gloves, is stepping on eggs and inserting tampons into anything, from a can of coke to a baby doll or an apricot. Everything ends up in a garbage bin.

The picture, the title and the tags are in perfect harmony once again. Still, approximately half of the tags do not have a correspondent in the video (for instance, the tag "sex" is irrelevant). In this situation, 50% of the aspects match.

5. Sex & Relationships

Controversially, the most popular video of the channel belongs to this category, having reached almost 15 million views. Entitled “How To Have Sex”, the featured image depicts a man restraining a woman from making noise. In the video, presumably the owner of the channel is in the kitchen, walks towards a blow doll, smashes an egg and puts a condom on a sausage. The counter in the kitchen is decorated with candles and pink flower petals arranged in the shape of a heart, while the lights are turned off. In this romantic scenery, a fully dressed Barbie doll and her Ken are sitting on top of each other, occasionally changing positions. A banana or some plush toys appear instead of one of the partners from time to time. In the end, the man appears again, throwing everything in the sink.

The title, the image and the tags are linked. Even the video content, although taken to a completely differently level, is related to them. Although the video does not depict two people having sexual intercourse, 90% of the tags (e.g. “sex positions”) are represented in a way or another.

6. Science & IT

Fifth overall and first of this type, the video called “How To Install GTA V” gained over 8 million views. While the featured photo is actually a screen shot taken from the game, the video presents a laptop over which milk, oil, cheese and other ingredients are thrown. The electronic device is then smashed with a hammer and a printed picture from the game is placed instead of the broken monitor.

The featured image, the title and the tags are relevant, while the actual content has almost nothing in common with them. The only linked things are the printed picture from the game and the laptop, because you need a device of this type in order to install a video game. The aspects analyzed match in proportion of 20%.

7. Conceptual Skills

The most popular video depicting something that cannot be realized with the help of a tutorial has almost 5 million visualizations and scored eighteenth overall. Entitled “How To Arrest Justin Bieber”, its featured photo depicts the seemingly cuffed artist getting out of a fancy car. The beginning of the video shows a toy police car drifting (also accompanied by sound). Then the man appears with a toy gun and heads it towards a doll whose face is covered with a picture of the singer. He shoots at the doll repeatedly and then throws milk and smashes eggs on it.

This time, the picture, the tags (e.g. "justin bieber arrested footage") and the title are connected to each other, but not so closely. The actual content does not make any sense. Nevertheless, the mere action of arresting the artist by following the steps in a tutorial is almost impossible to put into practice. In the case of this video, only about 10% of the aspects taken into account also match.

Therefore, going to RQ3, the title, featured images and tags of the media texts are generally closely related. Nonetheless, when it comes to establishing to what extent these aspects are also linked to the actual content, variations might occur. In conformity with the ratings awarded after analyzing each piece, there is a match of approximately 55% of the aspects overall.

Discussion

Whether the owner of the HowToBasic channel has a very well-developed tagging strategy or he just accidentally adds the perfect keywords, it is visible that these bring an enormous contribution in raising the number of visualizations, along with the appropriate titles and featured images. While all the videos are already submitted in the pre-defined YouTube category Howto & Style, the idea that they do belong there is strengthened by some of the tags most frequently associated with them, such as "method", "technique", "tips" or "tutorial". The "how to" tag also serves well for this purpose, but for attracting people on the channel too, as it contains a part of its name.

As the categorization showed, the owner of the channel covers pretty much every field that might be of human interest in his materials, cooking being by far his specialty. Given the high numbers of visualizations, some conclusions regarding the behavior of the viewers can also be drawn, as they seem to be searching for methods of doing everything at home, easy and fast. For example, they want to know how to use and fix their electronic devices or to discover secret recipes and cook dishes like in restaurants, and of course, as healthy as possible. Despite the fact that many of these seem rather unrealistic, like presenting the secret recipe for coke or for a McDonald's dish for instance, they are still not impossible to realize. For this reason, people keep searching for such methods, while proper tags and titles help solving the problem with finding them. It is not wrong to assume that people want to be healthy and make discoveries, but save resources at the same time, therefore providing useful methods in this sense can attract a lot of them. Once they have stumbled upon these materials, the next logical step would be to click play.

Having a channel that, at least in theory, presents tips and tricks in a variety of domains, adjectives and adverbs turned out to be the most useful tags the owner could use. These parts of speech were used as descriptors for the actions and the results supposedly presented in the videos. By the same token, another aspect that could be considered as a wise move is the use of the first and second person singular possessive adjectives “my” and “your” and the indefinite pronoun “someone”, because when searching, people might tend to write sentences like “to how wash your hair” or “how to give someone a foot massage”.

Moving further, the use of so many unique nouns could be beneficial in several ways. For instance, as most of them refer to dishes, by simply looking at the tags one could tell that the videos offer a variety of recipes. Consequently, when potential viewers will search for a certain recipe by typing the name of the dish, chances are that they find the videos on this channel with ease. The same goes with the verbs that were more frequently used while tagging, as they are quite diverse.

Furthermore, as this study showed, although the content has often nothing to do with the title or the image, or, most probably, with what the viewer is expecting to see if he or she encounters the channel for the first time, these techniques are still efficient since so many people access it. Moreover, the image quality and sound are low, and the resources used basically represent anything that can be found in a household, but these factors do not act as obstacles. Once the potential viewers start watching the content they will in fact discover that in most of the situations a man is mocking what he initially pledged to present.

Limitations and further research

The current study is limited in several ways, which gives opportunities for future work. First of all, it would be wrong to assume that these videos are only popular due to the very efficient tagging techniques and the close relationships between these keywords, the titles and featured images used and it was firmly mentioned earlier in this paper.

As seen with the help of the Google Chrome extension, these videos have also successfully spread on other websites, such as Facebook, Google+ or Twitter. For instance, as the possibility of gathering such data exists, a similar study, but with the focus on the relationship between the number of visualizations and the number of Facebook shares or tweets, can be made.

Secondly, as only seven videos were considered for the qualitative analysis, this might not be so conclusive and the results might differ in case a larger sample is chosen. Moreover, although the assumption was made in the beginning, the videos qualitatively analyzed were not the most popular overall. If the sample would have been selected according to the number of visualizations in general, the results might again not coincide.

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