Original Investigation

“I’ll be your cigarette—Light me up and get on with it”: Examining smoking imagery on YouTube

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Abstract

Introduction: Smoking imagery on the online video sharing site YouTube is prolific and easily accessed. However, no studies have examined how this content changes across time. We studied the primary message and genre of YouTube videos about smoking across two time periods.

Methods: In May and July 2009, we used “cigarettes” and “smoking cigarettes” to retrieve the top 20 videos on YouTube by relevance and view count. Eliminating duplicates, 124 videos were coded for time period, overall message, genre, and brand mentions. Data were analyzed using descriptive statistics.

Results: Videos portraying smoking positively far outnumbered smoking-negative videos in both samples, increasing as a percentage of total views across the time period. Fifty-eight percent of videos in the second sample were new. Among smoking-positive videos, music and magic tricks were most numerous, increasing from 66% to nearly 80% in July, with music accounting for most of the increase. Marlboro was the most frequently mentioned brand.

Discussion: Videos portraying smoking positively predominate on YouTube, and this pattern persists across time. Tobacco control advocates could use YouTube more effectively to counterbalance prosmoking messages.

Introduction

The Internet is used extensively to market and sell tobacco (Freeman & Chapman, 2008; Malone & Bero, 2000). While cigarette advertising is regulated in traditional mainstream media, such as television and radio, sites such as YouTube, with their consumer-generated media content, remain largely unregulated (Ciolli, 2007). Children access these types of sites and make up a large part of total users (Quantcast audience profile, 2009). Freeman and Chapman (2007) surveyed YouTube tobacco content in 2007 and found that smoking imagery

was prolific and accessible. However, no previous studies have explored whether this content changes rapidly or stays relatively stable across time. This study builds on earlier work by examining the overall message and genre of YouTube videos related to cigarette smoking retrieved across two time periods.

Importance of smoking imagery in smoking behavior

Smoking rates among teens remain unacceptably high. In 2007, 20% of high school students in the United States were current cigarette smokers (Centers for Disease Control [CDC], 2009). Each day in the United States, approximately 3,600 young people between the ages of 12 and 17 years try cigarette smoking and an estimated 1,100 become daily smokers (CDC). Approximately 90% of adult smokers began smoking before the age of 18 years (Schum & Gould, 2007). While no studies to date explicitly link smoking initiation to watching YouTube videos online, adolescent exposure to smoking on TV and in movies is associated with smoking initiation (Escobar-Chavez & Anderson, 2008; Sargent, Gibson, & Heatherton, 2009). It is reasonable to assume that similar associations may exist for Internet viewing.

History and rise of YouTube

YouTube describes itself as the “world’s most popular online video community” (YouTube Fact Sheet, 2009), and it is ranked as the world’s third largest Internet site (Alexa, 2009). Interactive sites like YouTube are part of the new wave of Internet use, known as Web 2.0, featuring applications that allow users to post their own content and network with others online. Anyone with an Internet connection can participate, and anyone can upload video clips to YouTube. Posting is relatively anonymous. Posted videos are identified only by the poster’s selected user name. To register and post, users must provide a user name, state, zip code, gender, and birth date (Create an account, 2009). Popular videos can reach millions of viewers (Freeman & Chapman, 2007). In addition to consumer-generated videos, the site also features clips from professionally produced movies, sports, and music.

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Advertising is also present, tailored to whatever the viewer is watching. For-profit companies have arrangements with YouTube to ensure that certain ads and videos are preferentially placed when specific search terms are entered (Freeman & Chapman, 2008). For example, when the search term “smoking cigarettes” was placed in YouTube’s search engine on May 17, 2009 at 3:07 p.m., four ads were displayed along with the videos. Two were for smoking cessation aids, one invited smokers to enroll in a smoking cessation research study and one offered \$100 in free cigarette coupons. Banner ads may also run at the bottom or top of the screen with related content.

In March 2009, nearly 5.5 billion video streams were viewed on YouTube by an estimated 90 million unique viewers. The average user spent 190.7 min visiting the site (Nielson News, Online and Mobile 2009). Users also tended to be young; in March 2009, an estimated 21% of YouTube users were aged 17 years or younger (Quantcast audience profile, 2009). As of May 20, 2009, 20 hr of new video is uploaded to YouTube each minute, totaling 28,800 hr of content added daily to YouTube (June, 2009).

YouTube does not, however, allow all types of videos to be posted. YouTube community guidelines exclude pornography or sexually explicit content. In addition, users are not to post videos showing things like animal abuse, drug abuse, underage drinking or smoking, gratuitous violence, shock videos, hate speech, or bomb making (YouTube community guidelines, 2009). Users are allowed to flag videos that contain inappropriate content, which are then reviewed by YouTube staff and removed if deemed inappropriate. Repeated postings of inappropriate videos by the same user can lead to account termination. Postings that do not violate community guidelines but are deemed “inappropriate” for all users can be age restricted by YouTube staff, allowing access only to those who state they are over 18 years in their profiles (YouTube community guidelines). However, there appears to be no independent check on age, with the system apparently relying on users to input accurate date of birth (Create an account, 2009).

Methods

Between May 15 and 17 and again between July 25 and 26, 2009, we searched for the words “cigarettes” and “smoking cigarettes” using YouTube’s search engine. We searched the Web site using YouTube’s “worldwide” mode with the language set to English. We chose these time periods to allow us to determine how much change occurred during an approximately 2-month interval. We chose these search terms because they would specifically pull in tobacco smoking content while minimizing other smoking content, such as smoking marijuana or “crack.” They were also chosen because they would be likely to bring up both pro and antismoking content. Each term was searched twice, once by relevance and once by view count. Relevance was chosen because that is the default search when topics are entered into the search engine. We chose view count to include the most popular videos in our sample. For each search and type of search, we viewed and catalogued the top 20 videos, for a total of 160 videos.

The first author viewed each video in the May sample to develop coding categories and an instrument for data collection

(Miles & Huberman, 1994; Ryan & Bernard, 2000). Once the instrument was developed, five videos not in our sample were then coded by the first author and a research assistant, and their coding was reviewed by the senior author. There was 100% agreement between reviewers on video message categorization. Based on one discrepancy related to a missing genre category for electronic nicotine delivery systems (ENDS, “e-cigarettes”), the instrument was slightly modified. Videos in the July sample were then viewed and coded by both researchers, working independently. There was 100% agreement between both reviewers for the videos in the second sample and 100% agreement between reviewers for the 27 videos that appeared in both the first and the second time period samples. Based on this level of agreement and the fact that the coding required minimal interpretive decision making, the full May sample was not recoded.

Each video in the sample was watched in its entirety. Videos that contained no smoking references or imagery, or were in a language other than English, were excluded. Videos that appeared in the sample more than once and appeared to be identical in all respects, including name of the poster and view count, were considered one video for this analysis. Following this process, 59 videos remained in the May sample and 65 videos in the July sample.

Videos were classified by whether they showed positive, neutral, or negative smoking imagery, using a taxonomy adapted from Freeman and Chapman (2007). Videos were considered negative if they contained a message that smoking cigarettes is dangerous and undesirable or that smokers should quit. Videos were considered positive if they mentioned or portrayed smoking in a favorable light, by showing smoking as fun, desirable, pleasurable, sexy, and/or socially advantageous. Videos were considered neutral if smoking was unimportant to the video and neither portrayed it positively or negatively. ENDS videos were considered positive smoking videos. Videos were further sorted by genre after identifying recurrent themes. Genres identified were how to quit monologues, professionally produced antismoking commercials, homemade appearing antismoking videos, comedy, e-cigarettes, smoking fetish, cigarette commercials, magic tricks, music, popular media and movie clips, poetry, satire, smoking while shooting guns and/or lighting fireworks, and videos making fun of smoking laws. Definitions were developed for each genre to assure consistency in assessment. The videos were also sorted by whether they contained a cigarette brand reference, and if so, the brand was recorded. A video was considered to have a brand reference if a brand name was either visually apparent or if the name was verbalized in the video.

Results

The number of hits retrieved by both search terms and by relevance and view count increased from May to July by an average of 11% (Table 1). Of 59 videos that met inclusion criteria in the May 2009 sample, 10 (16.95%) contained negative smoking messages. Together these 10 videos had been viewed a total of 1,791,975 times, accounting for 6.4% of total views of all May-sampled videos. Forty-eight videos contained positive smoking messages, comprising 81.36% of the sample. Collectively, these 48 videos had been viewed 24,572,388 times, accounting for

Table 1. Total YouTube hits for the search terms “cigarettes” and “smoking cigarettes”

Search term	Number of hits May 2009	Number of hits July 2009	Percent increase from May to July
“Cigarettes” sorted by relevance	52,000	55,400	6.5
“Cigarettes” sorted by view count	49,500	57,300	15.75
“Smoking cigarettes” sorted by relevance	29,900	32,100	7.4
“Smoking cigarettes” sorted by view count	18,100	21,200	17.12
Total	149,500	166,000	11.04

87.72% of total views. One video contained a neutral message and had been viewed 1,649,513 times, accounting for 5.89% of total views.

The July sample ($n = 65$) was similar, with 10 videos (15.38%) featuring negative smoking videos. These videos had been viewed collectively 1,009,971 times, accounting for 3.68% of total views. Fifty-three videos (81.54%) portrayed smoking positively, and these videos had been viewed 25,123,202 times, accounting for 91.49% of total views. Two videos contained a neutral message and had been viewed 1,326,435 times, accounting for 4.83% of total views. Twenty-seven videos appeared in both May and July samples. Thirty-eight videos (58%) were new to the July sample, while 32 videos in the May sample no longer appeared in the July sample.

Of videos featuring antismoking content, professionally produced tobacco control videos were the most popular and were viewed the most often, followed by homemade negative imagery (Table 2). The professionally produced videos were high-impact videos that graphically showed the disease effects of smoking (MisterTrimble, 2006; ZerlinTV, 2007). Appearing in both the May and the July samples, the most popular homemade appearing video demonstrated the tar content of 400 cigarettes by boiling water down that had been first obtained from the video creator's smoking machine, ending with a dark tarry glob (Peraina, 2007). In May, that video had been viewed 261,924 times; by July, view count had increased to 303,389, a 15.8% increase. How to quit monologues dropped from 25.15% of the total negative views in May to 12.17% in July. In May, the most popular video in that genre, seen 323,231 times, was a video that advised that quitting was possible using a two-pronged approach based on faith and

eliminating acidity from the body (Hitturkey24, 2007). However, by July, the most popular quitting video, seen 103,623 times, was a video by a self-help author giving smoking cessation advice while promoting his books and self-help tools (Ollys, 2006).

Videos portraying smoking in a positive light (Table 3) were more common and highly viewed than those depicting smoking negatively. In May, the ratio of the view counts of antismoking videos to videos that promoted smoking was almost 1:14, rising to 1:25 in July.

The most popular genres of positive videos were music and magic tricks, accounting for almost 66% of views of all the smoking-positive videos in May and nearly 80% by July, with music accounting for the increase. One of the most popular music videos in the May sample, viewed over 2.2 million times, showed a cigarette waking up in the morning, washing its face, using the toilet, and then going over to be smoked by the artist and his girlfriend. The chorus of the song included the lyrics, “I’ll be your cigarette, light me up and get on with it, I’ll be hard to forget. Good or bad I’m your habit” (Frontsidepromotions, 2007). Cigarettes were also portrayed as a friend in several songs. In a popular song by Tweet titled *Smoking Cigarettes*, the artist laments a breakup, singing, “I am smoking cigarettes tonight, and wondering where you’ve been . . .” (Czarnuszo21, 2008). The most popular video in both May and July was the song *Paparazzi*, by Lady Gaga, viewed almost 4 million times by July. While cigarettes were not the central theme of this song, the lyrics included, “I’m staring between the sets, eyeliner and cigarettes”; Live4Dream, 2008). Within the magic tricks genre, one video accounted for more than half of total view counts in both May and July. In this video, Criss Angel, a well-known

Table 2. Negative smoking videos on YouTube May 2009 and July 2009

	Totals of all negative videos		How to quit Monologues		Professionally produced antismoking videos		Homemade antismoking videos		Antismoking Comedy		Popular Media		Music Videos	
	May	July	May	July	May	July	May	July	May	July	May	July	May	July
Number of videos	10	10	5	2	2	3	2	2	1	0	0	2	0	1
% of total	16.95	15.38	8.33	3.08	3.39	4.62	3.39	3.08	1.69	0	0	3.08	0	1.54
% of negative videos	100	100	50	20	20	30	20	20	10	0	0	20	0	10
View count	1,791,975	1,009,971	450,613	122,883	644,622	551,954	505,793	310,948	190,981	0	0	15,986	0	8,218
% of total view count	6.40	3.68	1.61	0.45	2.30	2.01	1.81	1.13	0.68	0	0	0.06	0	0.03
% of negative view count	100	100	25.15	12.17	35.97	54.65	28.22	30.79	10.66	0	0	1.58	0	0.81

Note. Total videos in sample, including negative, positive, and neutral videos: May: $n = 59$ and July: $n = 65$.

Total view counts in sample, including negative, positive, and neutral videos: May: $n = 28,013,876$ and July: $n = 27,459,608$.

Table 3. Positive smoking videos on YouTube May 2009 and July 2009

	Totals of all positive videos		Electronic nicotine delivery systems		Smoking fetish		Cigarette commercials		Magic tricks	
	May	July	May	July	May	July	May	July	May	July
Number of videos	48	53	4	5	11	15	6	8	6	5
% of total	81.3	81.5	6.78	7.69	18.6	23.08	10.71	12.31	10.17	7.69
% of positive videos	100	100	8.33	9.43	22.92	28.30	12.50	15.09	12.50	9.43
View count	24,572,388	25,123,202	321,092	366,324	655,782	661,566	1,761,434	2,258,296	8,985,127	8,058,060
% of total view count	87.72	91.49	1.15	1.33	2.34	2.41	6.29	8.22	32.7	29.35
% of positive view count	100	100	1.31	1.46	2.67	2.63	7.17	8.99	36.57	32.07

	Music		Poetry		Cigs, guns, and fireworks		Pop media and movie clips		Unreasonable laws		Satire	
	May	July	May	July	May	July	May	July	May	July	May	July
Number of videos	11	16	1	1	3	0	3	3	2	0	1	0
% of total	18.64	24.62	1.69	1.54	5.08	0	5.08	4.62	3.39	0	1.69	0
% of positive videos	22.92	30.19	2.08	1.89	6.25	0	6.25	5.66	4.17	0	2.08	0
View count	7,203,731	11,985,869	150,083	154,808	2,727,823	0	1,672,600	1,638,279	860,870	0	233,846	0
% of total view count	25.71	43.65	0.54	0.56	9.74	0	5.97	5.79	3.07	0	0.83	0
% of positive view count	29.32	47.71	0.61	0.62	11/01	0	6.81	6.52	3.50	0	0.95	0

magician, smokes while he performs sleight of hand magic tricks with cigarettes as props. While he expertly smokes, he tells his audience that he is not a smoker and that they should not take up smoking; however, he appears to be enjoying smoking, and his trick only works if the cigarette is lit; thus, his actions belie his words (Amixtika, 2006). Other videos in the magic genre showed cigarettes similarly as a prop that could be used to perform amazing tricks.

Smoking fetish videos accounted for a significant percentage of the positive videos in the sample (28.3% in May and 22.92% in July) but only a small percentage of the total view counts (2.63% in May and 2.67% in July). These primarily showed women smoking seductively; several directed viewers to other Web sites for more explicitly sexual content (Clip1493, 2009; Doofman45, 2009; IsabelleEvans398, 2009).

Many videos portraying smoking positively also referenced a specific brand of cigarettes (Table 4). While no antismoking videos mentioned brands, 20 (41.6%) of the positive videos viewed in May and 25 (47.1%) in July mentioned a brand. The most popular brand mentioned was Marlboro, which was mentioned in about 50% of videos in this genre in both time periods. In May, vintage cigarette commercials accounted for 30% (6) of videos with brand references and 33.7% (1,761,434) of the total number of views that contained a brand reference. In July, seven vintage cigarette commercials accounted for 28% of the brand references and 43% (2,258,296) of the total number of views containing a brand reference. No vintage cigarette commercials included a Surgeon General's warning.

When examining brand references, ENDS ("e-cigarettes") videos, while a very small percentage of the total overall videos, increased in relative popularity. In the May sample, there were two videos, out of a total of four in the genre, that promoted ENDS and also mentioned a brand, with a total view count of 93,592. By July, five out of five ENDS promotion videos mentioned a brand, with a total view count of 366,324, a nearly four-

fold increase. In these videos, ENDS were promoted as healthier alternatives to smoking tobacco.

Limitations

Our study has limitations. YouTube is always rapidly changing, and our sample captured only a portion of material available during two timeframes, albeit material most likely to be viewed first if our search terms were entered. There were approximately 315,500 total hits (probably many duplicative) from which samples were selected. The 160 videos we viewed may not represent the full range of negative and positive smoking videos on YouTube. In coding the videos, we coded vintage commercials as positive because they typically show smoking as fun, desirable, etc.; however, it is possible that some viewers watching these ads might interpret them differently. Other search terms might have retrieved a different set of videos. In future studies, a wider variety of terms could be searched across more timepoints. Although we were able to retrieve the view counts of each video in the sample, there is no way of knowing how many unique viewers this number represents. Conceivably, a few viewers watching video repeatedly could significantly increase view counts while not representing more viewers. In addition, our design does not allow us to draw conclusions about the possible effects of watching such videos.

Table 4. Brand references on YouTube May 2009 and July 2009

	May	July
Number of videos with brand references	20	25
% of videos with brand references	33.8	38.5
% of positive videos with brand references	41.6	47.1
View count of videos with brand references	5,219,412	5,199,874
% of total views with brand references	18.6	18.9

Discussion

This study suggests that videos portraying smoking positively predominate on YouTube and that this pattern persists across time. Further, the most-viewed videos tended to be music videos, suggesting that, as with smoking in commercially produced movies, such material may serve to portray smoking as normal, glamorous, and desirable rather than addictive and deadly (Dalton et al., 2003, 2009; Song, Ling, Neilands, & Glantz, 2007).

Evidence from previous studies suggests that positive media portrayals of smoking in general, as well as tobacco advertising and promotion, are causal factors in smoking initiation among youth (Escobar-Chavez & Anderson, 2008; Lovato, Linn, Stead, & Best, 2003; Marcus, Davis, Loken, Viswananth, & Wakefield, 2008; Sargent et al., 2009; Song et al., 2007; Titus-Ernstoff, Dalton, Adachi-Mejia, Longacre, & Beach, 2008). In a meta-analysis of cohort studies, Cochrane Review researchers concluded that tobacco advertising and promotion increased the likelihood that adolescents will start to smoke (Lovato et al.). Adolescent exposure to movie smoking is strongly predictive of trying cigarettes in a dose-response fashion (Sargent et al.). Given this body of research, it is reasonable to assume that Internet video viewing could have similar effects. Thus, despite many advances in tobacco control policy over the past decade, YouTube may be renormalizing smoking and undermining public health efforts to reduce it.

Young people, particularly in Western countries, are highly exposed to a variety of electronic media. In 2004, children aged 8–18 years were estimated to have 7 hr and 50 min of daily electronic media content exposure from all sources, including television, video players, radio, audio players, video game devices, computers, and handheld communication devices (Roberts & Foehr, 2008). The Pew Internet Project reported that 93% of children aged 12–17 years have access to a computer and use it to access the World Wide Web (Jones & Fox, 2009). Among children with computers, 8- to 10-year olds report 37 min a day of nonschool computer use; among 11- to 14-year olds, such exposure spans 1:02 hr, and by ages 15–18 years, the average leisure time computer use per day is 1:22 hr (Roberts & Foehr). With the advent of new generations of handheld devices, such use may increase.

While tobacco advertising is regulated in traditional media outlets, no such policies exist for user-generated content posted on sites, such as YouTube. This loophole has likely not gone unnoticed by tobacco companies (Chapman & Freeman, 2008; Freeman & Chapman, 2007, 2008, 2009). Courts have regarded the Internet as being more like a “common carrier,” such as a telephone company, rather than a medium, such as newspaper or television (Jordan, 2008; Jesdanun, 2008). Legal challenges in the United States have been largely ineffective due to Section 230 of the Communications Decency Act, which states that “No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider,” thus effectively immunizing providers of interactive Web sites, such as YouTube from liability for third party postings (Abril, 2009; George & Scerri, 2007; Latham, Butzer, & Brown, 2008).

However, individuals posting videos may not be held responsible for content either, especially as it relates to tobacco subject

matter. Because individual posters are not engaging in “commercial speech,” the First Amendment would likely protect users who spontaneously create their own truthful online cigarette content without active involvement from tobacco companies, thus making them immune to prosecution under the U.S. Cigarette Labeling and Advertising Act (CLAA; Ciolli, 2007). Courts have ruled that free speech on the Internet is protected as strictly as anywhere else (Chilson, 2009). One policy option in the United States would be to update the CLAA to reflect the current technological environment and the proliferation of online smoking content. When the CLAA was passed in 1969, the Internet did not exist, and Web 2.0 could not have been anticipated (Ciolli). However, regulating tobacco on the Internet would likely be a messy affair involving multiple legal challenges, and efforts to censor this content could create unintended consequences, including rendering it of even greater interest to youth.

Research exploring tobacco industry use of such sites would be valuable. For example, in Facebook, another Web 2.0 application, there are currently more than 5,000 groups that promote Marlboro cigarettes (Facebook, 2010). Freeman and Chapman (2010) found more than 500 Facebook pages that were related to British American Tobacco (BAT) products and that employees of BAT were actively promoting BAT brands on Facebook by joining administering groups, joining fan pages, and posting pictures of BAT events, products, and promotional items.

In the meantime, Internet sites could better police themselves. YouTube’s community guidelines do not allow the posting of videos showing underage smoking (YouTube Community Guidelines, 2009), but in many sampled videos, girls who appeared to be teenagers were smoking cigarettes in apparent violation of YouTube guidelines. Tobacco control advocates could conceivably pressure YouTube to adhere to its own guidelines by regularly identifying and reporting these videos. In addition, paid advertising promoting cigarettes could be banned from the site, consistent with current policy for television.

Tobacco control advocates could also use YouTube more effectively. Currently, it appears that there is much more prosmoking imagery than antismoking imagery. In addition, the positive imagery is watched more frequently and is more interesting, colorful, and catchy. Videos challenging the normalizing of smoking or the legitimacy of the tobacco industry (Chapman & Freeman, 2008) could be equally edgy and interesting. When tobacco-negative user content is generated spontaneously, the tobacco control community could help it rise in popularity by viewing it and disseminating the links, thereby helping it “go viral.” Health agencies should develop action plans around interactive media and invest resources in developing effective social media campaigns.

Conclusions

Addressing a rapidly changing and fluid media environment such as YouTube (and other Web 2.0 sites) will require innovation and engagement from the public health community. Creating a counterbalance to the prosmoking images that appear to predominate now should be a priority for those concerned with reducing adolescent smoking uptake and denormalizing tobacco use.

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Declaration of Interests

None declared for Susan Forsyth. Ruth Malone owns one share each of Philip Morris USA/Altria, Philip Morris International, and Reynolds American for research and advocacy purposes.

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