

## **Reacting to YouTube Videos: Exploring Differences Among User Groups**

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### **Abstract**

*Thanks to YouTube and other video sharing websites, over a short period of time millions of ordinary people have become regular viewers and creators of user-generated online videos. In this paper we explore how users react to these videos and differences among user groups. Our exploratory study of 60 YouTube users found that women and men, community members and non-members, and lurkers and posters differed in their reactions to user-generated online videos, and that the user interface may also influence user reaction. Findings suggest the design of online video technology and content should consider the socio-cultural contexts of online video use, and they highlight the challenges of developing inclusive technologies to meet all users' needs.*

### **Research Context**

Very little is known about how millions of ordinary people react to user-generated online videos. The popularity of YouTube and other video-sharing websites has highlighted the need for research but very little has been published about users of these video sites in the communications literature. The information in user-generated videos is much richer than other types of online information, such as text and graphical information. Previous research on users' reactions to text, graphics, static images or other types of online content does not necessarily apply to videos.

Different groups of people may have different levels of acceptance and use of a new technology. This concept is implicit in influential theories such as Rogers' (2003) diffusion of innovations in communications and media research and the TAM, Davis' (1985) technology acceptance model in management information systems research. The TAM model reveals that people are adaptable, and are more likely to adopt a technology that is perceived as being useful, whether or not they find it easy of use. Extensions of the TAM model identified gender differences (Gefen and Straub, 1997) and cultural differences (Straub, Keil and Brenner, 1997) in email

perception and use. From these starting points we wanted to explore how users react to online videos and if different groups of users have different reactions.

Viewing user-generated online video is similar in some ways to viewing television. Audience research, an important field in media and communications studies, has built a considerable corpus of knowledge about how people react to visual images. The most influential audience research theorist is Stuart Hall, whose 1981 theory of "encoding and decoding" of television discourse remains the most referenced work in the field (Hall, 1999). Hall's central argument is that although creators of a visual image may have a message in mind when they create or "encode" it for viewers, it does not necessarily follow that the viewers will "decode" the message the way it was intended. Viewers actively construct meanings rather than passively receive them. Both encoding and decoding are socially constructed activities, and Hall's theory stresses that visual messages will be constructed differently in different social and cultural contexts. Researcher David Morley used Hall's theory in a seminal study of the audience of Nationwide, a popular British news and current affairs television program on the BBC. Morley (1980) found that the interpretation of the television program varied systematically in relation to the socio-cultural background and group identity of the viewers. Since the Nationwide study, numerous other audience researchers have explored how different social groups respond differently to broadcast visual images.

Many researchers consider audience research as currently in crisis, although there is lively debate about the extent and nature of the crisis (Morley, 2006). One of the current challenges is the new media environment. Audience research to date has not encompassed the situation where viewers of visual images are also, or potentially can be, the creators and disseminators of the visual images, as in the case of user-generated videos.

Viewers of user-generated online video may also share similarities with lurkers in online communities. The literature includes numerous studies on online, primarily text-based, communities. Users who post text messages are

commonly called “posters,” and users who read but do not post messages are “lurkers.” Very few researchers include these silent users in their analyses. The fact that little is known about lurkers is all the more remarkable given that, as noted by Nonnecke and Preece (1999), lurkers make up more than 90% of many online communities. Other research by Nonnecke and Preece (2000) suggests lurking is “a highly active, methodological and goal-driven process.” Another study, by Takahashi, Fujimoto and Yamasaki (2003), positions lurkers as active participants of an online community who contribute social capital to the off-line community of users.

## Methodology

Based on our review of the literature, our hypothesis was that different user groups will have different reactions to YouTube videos. We designed an exploratory study of users’ reactions to online videos that would allow analysis of the following: users viewing videos with different user interfaces, users who were posters or lurkers, users who were members and non-members of a community, and gender. We chose YouTube as an obvious source of online videos and a potential user community. We also chose a cultural or geographic user community – Atlantic Canada – where several of the authors live. This region comprising four provinces is sparsely populated, and traditionally the residents have a strong sense of Atlantic Canadian identity.

Sixty participants who were YouTube users were recruited from a university in Atlantic Canada via notices placed in a university electronic newsletter and on bulletin boards and distributed in classes. The study was designed to include an equal number of males (30) and females (30). More than half (58.3%) reported they had lived their entire lives in Atlantic Canada. All reported they had visited the YouTube site at least once, and 55% visited YouTube several times a week or more. Participants completed a paper questionnaire after viewing each of seven short YouTube videos, including three with public interest content about Atlantic Canada and four video blogs. Their reactions to two representative Atlantic Canada videos are discussed in this study; the four video blogs were analyzed for a separate study.

The videos were presented in blocks - half the participants viewed the videos first and half viewed the video blogs first. Within the block, the videos were presented in random order. Viewers accessed the videos by clicking a URL link on a Word document. We created two viewing conditions: participants were randomly assigned to view the videos on either the YouTube site (where they could see viewer comments, ratings and other information) or on a media player called flv, independent of the YouTube site. Completing the study took about 45 minutes and participants received a small honorarium.

We conducted a separate content analysis of YouTube videos by Atlantic Canadians (Milliken et al, 2008) and chose two videos for the current study that are typical of

YouTube videos with public interest content by Atlantic Canadians; both videos are slide shows of images with a pre-recorded commercial music soundtrack and are roughly the same length. Images from each of these videos are shown below.

The first, Lobstering Video, runs for 4:04 and consists of images of the lives of lobster fishers, including lobster boats, small ports, and lobster processing facilities. The second video, Atlantica Protest, runs for 3:24 and consists of images of protesters preparing for and participating in a local protest against corporate control.

### Lobstering video



### Atlantica Protest



## Results

### **Overall Reactions to the Videos**

*Talking about YouTube videos generally* - We asked: "Do you ever talk with other people about videos you have seen on YouTube?" and 96.7% of users said yes.

*Learning from the two videos* - We asked: "Did you learn something from this video?" and gave five choices (yes-very much, yes-somewhat, neutral or unsure, no-not much, no-not at all). Overall, 33.3% of users said they learned something from Lobstering Video and 66.7% said no or were neutral or unsure; and 45% of users learned something from Atlantica Protest and 55% said no, were neutral or unsure.

*Influencing or changing an opinion from viewing the two videos* - Users were asked: "Did the video influence or change your opinion about anything?" and were given the same five choices as the question above. Overall, 28.3% said Lobstering Video influenced or changed their opinion and 71.7% said no or were unsure; and 18.3% said Atlantica Protest influenced or changed their opinion and 81.7% said no or were neutral or unsure.

*Writing text responses to the two videos* - Users were instructed: "Imagine that you are posting a text reply to this video, and write your response in the box below." Responses to the text reply question were coded; 66.6% wrote a positive, supportive or engaging text response to Lobstering Video and 33.4% wrote a response that was neutral or unsure, mixed, mostly negative, or did not respond (examples of these different types of responses will follow). Responding to Atlantica Protest, 56.7% wrote a positive, supportive or engaging text response, and 43.3% wrote a text that was neutral or unsure, mixed, or mostly negative, or did not respond.

*Rating the two videos* - Users were instructed to rate the two videos using the YouTube rating system: 1 star - poor; 2 stars - nothing special; 3 stars - worth watching; 4 stars - pretty cool; 5 stars - awesome. Overall, 68.3% of users rated Lobstering Video worth watching (three stars or more), and 31.7% rated it not worth watching (one or two stars); and 55% rated Atlantica Protest worth watching and 45% rated it not worth watching.

### **User Groups**

*User interface* - 50% of users viewed the videos on the YouTube site for the study and 50% viewed them on the flv media player independent of the YouTube site.

*Posting or lurking* - We divided our users into two groups, posters (31.7%) who reported they had previously posted a comment or video to the YouTube site, and lurkers (68.3%) who had never posted a comment or video to YouTube.

*YouTube community* - Users were asked: "Do you feel like you are a member of a YouTube community?" and were given five choices (yes-very much, yes-somewhat, neutral or unsure, no-not much, no-not at all). Overall, 30%

said yes (from here on called "YouTube community members") and 70% were neutral, unsure or said no (non-members of a YouTube community).

*Atlantic Canadian community* - We asked: "Do you feel like you are a member of an Atlantic Canadian community?" and gave users the same five choices as the question above. Overall, 76.7% said yes (Atlantic Canadian community members) and 23.3% said no or were neutral or unsure (non-members of an Atlantic Canadian community).

*Gender* - Of the 60 YouTube users, 50% were female and 50% male (the equal number was a study design).

### **Analysis of Reactions by Different User Groups**

For our analysis, we used the dichotomized categories described above for the user groups (e.g. YouTube community members vs. non-members). We used a chi-square analysis to examine the variables related to their reactions to the videos. Below we report only the results for one dichotomized category in each user group, rather than repeat the results for the opposite pair. We report differences that are statistically significant using the chi-square analysis. The asymptotic 2-sided significance level was used, and only significance levels of .10 or lower were considered statistically significant. We decided the .10 significance level was appropriate for this exploratory study.

In addition to conducting the chi-square analysis, we also found differences that we report as trends. In these cases, the number counts were too low to perform the chi-square analysis so we are not able to confirm these as statistically significant.

On the questionnaire there was space for users to explain why they rated the video as they did and to explain their quantitative responses to the reaction questions. The quotes below from the questionnaires are illustrative, not representative, of all responses from the different groups of users. We present them to give a flavour of the different types of reactions users experienced.

*Interface* - Users viewing the videos on the flv player were more likely to rate Lobstering Video worth watching (80% compared to 56.7% of users who viewed it on the YouTube site). Sample rating comment from a user using the flv player: "I believe that this was a video that people should see. It wasn't the greatest video but it was touching." From one using the YouTube interface: "I did not find it very interesting or entertaining."

*Posters and lurkers* - Lurkers were more likely to say Lobstering Video did influence or change their opinion (36.6% compared to 10.5% of posters). Sample comment from a lurker: "There is a bigger problem with decline in fishing resources than I thought & something needs to be done about it." From a poster: "I feel indifferent about my opinions of fishermen." Trend: Lurkers were more likely to say Atlantica Protest did influence or change their opinion (24.4% compared to 5.3% of posters).

*YouTube community* - YouTube community members were more likely to rate Lobstering Video worth watching (83% compared to 61.9% of non-members) and say they

learned something from Atlantica Protest (66.7% compared to 35.7% of non-members). Sample comment from a YouTube community member: "I knew corp. control was a huge issue today and I agree it should be controlled somehow but I had never heard of Atlantica." From a non-member: "I'm just left wondering why Atlantica is so bad."

*Atlantic Canadian community* - Atlantic Canadian community members were more likely to post a positive text response to Lobstering Video (73.9% of members compared to 42.8% of non-members). Sample text response from a member: "Well done. I like the music, and some very nice pictures! Thank you for sharing a bit of insight into this local industry and its importance." From a non-member: "Booring!!!" Trends: Atlantic Canadian community members were also more likely to rate Lobstering Video worth watching (78.3% compared to 35.7% of non-members), to say they learned something from the video (39.1% compared to 14.3% of non-members) and that the video influenced or changed their opinion (34.8% compared to 7.1% of non-members).

*Gender* - Female users were more likely to rate Lobstering Video worth watching (80% compared to 56.7% of males) and Atlantica Protest worth watching (66.7% compared to 43.3% of males). Sample rating comment from a female user: "I gave this video 3 stars because I personally don't know what Atlantica is, so it wasn't that interesting for me. But it does make me want to visit their website." From a male user: "The message wasn't clear because of lack of facts. I was kind of lost."

## Discussion

We found different reactions to the videos between the dichotomized categories for every user group. Most users overall rated Lobstering Video worth watching, with YouTube community members, female users, and those viewing it on the flv interface more likely to give it a higher rating than non-members of a YouTube community, male users, and those viewing it on the YouTube site. More than half of users overall rated Atlantica Protest worth watching, with female users more likely to give it a higher rating than male users. Most users overall said they did not learn something from either video, with YouTube community members more likely than non-members to say they learned something from Atlantica Protest. Most users overall said the videos did not influence or change their opinion, with lurkers more likely than posters to say Lobstering Video influenced them. Most users overall wrote a positive text response to both videos, with Atlantic Canadian community members more likely than non-members to write a positive response to Lobstering Video.

The findings suggest that the core assumption in audience research - that different socio-cultural groups will have different reactions to viewing visual images - holds true for online videos. More research is needed to determine why viewers watching the video on the flv player rated it higher - it would be interesting to know if the simpler

interface without the "distraction" or influence of other content on YouTube made for a more positive viewing experience. The findings also suggest that research that positions lurkers as active participants of text communities is also valid for lurkers in online video communities. In our study, lurkers were more likely to have their opinion influenced by the videos. This finding suggests that more research is needed on the benefits derived by lurkers in online video communities. The fact that almost all the users in our study talk about videos they have seen on YouTube with others suggests that research on lurkers should include the role of lurkers in an off-line community.

Results from this exploratory study cannot be generalized to the larger population of current or potential users of YouTube and other online video applications. We studied a small sample of user-generated online video users in a specific geographical region and all our users were university students - they do not represent the larger population. The videos selected for the study were typical of videos on YouTube posted by Atlantic Canadians but they are not typical of all videos on YouTube or all user-generated online videos.

Designers and developers of user-generated online video applications need to realize that the same online video may be perceived differently by different groups of users. This implies first that the design of online video technology and content needs to take the socio-cultural contexts of online video use into account. Usability studies and trials should include a broad range of users to ensure that different perspectives are included. Applications may be tailored to have more impact for specific user groups. The need to include online video lurkers in usability studies speaks to the challenges of developing information and communication technologies to meet the needs of all users. As technology researchers, whether we use questionnaires or other tools, when we ask for opinions we may be getting less feedback on how we can improve things for lurkers. We need to remain cognizant of this and identify other ways to obtain feedback from the silent users.

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